

Canyon Fuel Company, LLC  
Dugout Canyon Mine  
P.O. Box 1029  
Wellington, Utah 84542

**COPY**

*C/007/039 Incoming*

# 3728

*K*



February 16, 2011

Coal Regulatory Program  
Utah Division of Oil, Gas and Mining  
1594 West North Temple, Suite 1210  
Salt Lake City, UT 84114-5801

RE: 2010 Midterm Permit Review Deficiencies, Task ID #3728  
Dugout Canyon Mine, Canyon Fuel Company, LLC, C/007/039, Carbon County, Utah

Dear Sirs:

Attached please find four clean copies of revisions to the Dugout Permit associated with the Midterm Review. Revisions have been made to the M&RP, Degassification Amendment, Refuse Pile Amendment and General Chapter 1, all are provided in separate folders within this submittal. The separate folders should facilitate an easier incorporation into the permit binders.

A fifth copy of this submittal has been delivered to the Price field office.

Thank you for your assistance and if you have any questions please call me at (435) 636-2869.

Sincerely yours,

Vicky S. Miller

cc: Dave Spillman

File in:

☐ Confidential

☐ Shelf

☒ Expandable

Date Folder *02222011 C/0070039*

See *Incoming* For additional

**RECEIVED**

**FEB 22 2011**

**DIV. OF OIL, GAS & MINING**

## APPLICATION FOR COAL PERMIT PROCESSING

**COPY**Permit Change ☒ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: Canyon Fuel Company, LLC

Mine: Dugout Canyon Mine

Permit Number: C/007/039

Title: Clean Copies of 2010 Midterm Permit Review Deficiencies, Task ID # 3728

Description, Include reason for application and timing required to implement:

**Instructions:** If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

- ☐ Yes ☒ No 1. Change in the size of the Permit Area? Acres: \_\_\_\_\_ Disturbed Area: \_\_\_\_\_ ☐ increase ☐ decrease.  
☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# \_\_\_\_\_  
☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?  
☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?  
☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?  
☐ Yes ☒ No 6. Does the application require or include public notice publication?  
☐ Yes ☒ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?  
☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?  
☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # \_\_\_\_\_  
☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?  
 Explain: \_\_\_\_\_  
☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?  
☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)  
☐ Yes ☒ No 13. Does the application require or include collection and reporting of any baseline information?  
☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?  
☒ Yes ☐ No 15. Does the application require or include soil removal, storage or placement?  
☒ Yes ☐ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?  
☐ Yes ☒ No 17. Does the application require or include construction, modification, or removal of surface facilities?  
☐ Yes ☒ No 18. Does the application require or include water monitoring, sediment or drainage control measures?  
☒ Yes ☐ No 19. Does the application require or include certified designs, maps or calculation?  
☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?  
☒ Yes ☐ No 21. Have reclamation costs for bonding been provided?  
☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?  
☐ Yes ☒ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

David Spillman  
Print Name

David Spillman, Engineering Manager  
Sign Name, Position, Date

Subscribed and sworn to before me this 16 day of February, 2011

Vicky Sue Miller  
Notary Public

My commission Expires:

Attest: State of UTAH 1-02, 2012 } ss:  
County of CARBON



For Office Use Only:

Assigned Tracking  
Number:

Received by Oil, Gas &amp; Mining

**RECEIVED****FEB 22 2011****DIV. OF OIL, GAS & MINING**

# COPY

**Title:** Clean Copies of 2010 Midterm Permit Review Deficiencies, Task ID # 3728

### DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED

[illegible]

DIV. OF OIL, GAS & MINING

GENERAL CHAPTER 1  
APPENDIX 1-1

ARCH COAL INC  
2010 OWNERSHIP AND CONTROL UPDATES

October 2010



ARCH COAL INC. (144492)  
OWNERSHIP AND CONTROL INFORMATION

Name	Position	Begin Date
LEER, STEVEN F	CEO	7/1/97
LEER, STEVEN F	DIR	7/1/97
LEER, STEVEN F	CB	4/28/06
LANG, PAUL	SVP	12/7/06
DREXLER, JOHN T	CFO, SVP	5/1/08
BESTEN JR, CLARENCE HENRY	SVP	12/01/02
PEUGH, DAVID B	VP	7/1/97
LOCKHART, THOMAS A	DIR	2/21/03
BOYD, JAMES ROBERT	DIR	7/1/97
JONES, ROBERT G	SVP	8/1/2008
JONES, ROBERT G	GC, SEC	10/16/00
STEELE, CHARLES DAVID	VP (TAX)	4/24/03
EAVES, JOHN W	COO	12/11/02
EAVES, JOHN W	DIR	2/23/06
EAVES, JOHN W	PRS	4/28/06
BUMBICO, ANTHONY S	VP	4/27/06
HUNT, DOUGLAS H	DIR	7/1/97
FLORCZAK, JAMES E	TRS	8/17/98
PERRY, MICHAEL A	DIR	9/28/98
SANDS, THEODORE D	DIR	2/25/99
LORSON, JOHN W	VP, CAO	4/30/08
POTTER, ROBERT G	DIR	4/26/01
SLONE, DECK S	VP	4/26/01
FELDMAN, SHEILA B	VP	2/3/03
GODLEY, PATRICIA FRY	DIR	7/22/04
WARNECKE, DAVID N	VP	8/8/05
TAYLOR, WESLEY M	DIR	7/28/05
JENNINGS, BRIAN J	DIR	7/27/06
HARTLEY, DAVID E	VP, CIO	8/1/09
WARNER, CASEY	DIR	4/23/09
PLOETZ, JON S	ASC, AGC	2/18/10
JONES, J. THOMAS	DIR	7/21/10
WOLD, PETER I.	DIR	7/21/10

Name	Position	Begin Date	End Date
<b><u>CHANGES 2006 - 2010</u></b>			
HORGAN, JANET L	ASS	10/16/00	10/14/05
HORGAN, JANET L	AGC	10/16/00	12/14/05
BOYD, JAMES ROBERT	CB	7/1/97	4/28/06
EAVES, JOHN W	EVP	12/11/02	4/28/06
LEER, STEVEN F	PRS	7/1/97	4/28/06
MESSEY, ROBERT J	CFO, SVP	12/1/00	4/30/08
KELLEY, ALLEN	COF	3/15/05	11/17/08
ABBENE, MICHAEL T	VP, CIO	7/1/05	7/31/09
BILLHARTZ, GREGORY A	ASC	12/8/05	10/6/09
LORSON, JOHN W	COP	4/9/99	4/30/08
BESTEN JR, CLARENCE HENRY	VP	7/1/97	12/01/09
BURKE, FRANK M	DIR	9/7/00	Deceased 7/24/10

## LEGEND

AGC - ASSISTANT GENERAL COUNSEL  
AST - ASSISTANT TREASURER  
CB - CHAIRMAN OF THE BOARD  
CFO - CHIEF FINANCIAL OFFICER  
COO - CHIEF OPERATING OFFICER  
CIO - CHIEF INFORMATION OFFICER  
EVP - EXECUTIVE VICE PRESIDENT  
GM - GENERAL MANAGER  
GC - GENERAL COUNSEL  
SEC - SECRETARY  
VP - VICE PRESIDENT  
SVP - SENIOR VICE PRESIDENT

ASC - ASSISTANT SECRETARY  
CAO - CHIEF ACCOUNTING OFFICER  
CEO - CHIEF EXECUTIVE OFFICER  
COF - INTERNAL AUDITOR  
COP - CONTROLLER  
DIR - DIRECTOR  
FIN - FINANCE  
  
PRS - PRESIDENT  
TRS - TREASURER

October 8, 2010

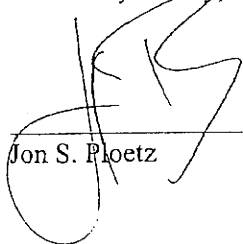
ASSISTANT SECRETARY'S CERTIFICATE

ARCH COAL, INC.

I, Jon S. Ploetz, Assistant Secretary of ARCH COAL, INC., a Delaware corporation (the "Company"), hereby certify to the following:

1. On July 21, 2010, J. Thomas Jones was elected a Director of the Company; and
2. On July 21, 2010, Peter I. Wold was elected a Director of the Company.

WITNESS my hand and seal of this Company this 21st day of July, 2010.

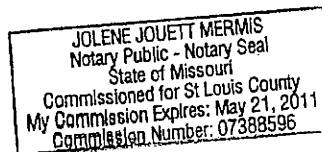
  
\_\_\_\_\_  
Jon S. Ploetz

State of Missouri    )  
                              ) ss  
County of St. Louis )

Sworn and Subscribed to before me this 21st day of July, 2010.

My Commission Expires: May 21, 2011

  
\_\_\_\_\_  
Jolene Mermis



## CHAPTER 2

### SOILS

At the Pace Canyon fan portal site, the topsoil and underlying unconsolidated materials will be removed and stockpiled together. The entire mixture will be treated as topsoil in compliance with R614-201-234.300. The recovery of topsoil/growth medium will be maximized at the site.

**TABLE 2-2**  
**TOPSOIL AND SUBSTITUTE TOPSOIL VOLUMES**

AREA	MATERIAL TYPE	Volume Estimated at Salvage
NORTHWEST FACILITIES AREA (AREA 2)	TOPSOIL/OVERBURDEN	1,653 CY
COAL STORAGE AREA (AREA 3)	TOPSOIL/SUBSOIL	4,869 CY
SEDIMENT POND, SLOPE AREA, AREAS BETWEEN ROAD AND CREEK (AREAS 4, 6, 7)	TOPSOIL/SUBSOIL	20,118 CY
WATER TANK AREA (AREA 8)	TOPSOIL/SUBSOIL	247 CY
SLOPE EAST OF COAL STORAGE PILE (AREA 9)	TOPSOIL/SUBSOIL	333 CY
GILSON WATER WELL*	TOPSOIL/SUBSOIL	134 CY
SMALL SUBSTATION	TOPSOIL/SUBSOIL	140 CY
TOTAL		27,450 CY
Topsoil/Subsoil Stockpile Survey		Cubic Yards
North Pile (1998), Includes Area 5 Soils		11,300
South Pile (1998)		13,939
Gilson Well Pile (2006)		134
Small Substation Pile (2006)		140
Subsoil Pile (2006)		734
TOTAL		26,247
North Pile - Pace Fan		1,941

South Pile - Pace Fan	1,218
TOTAL	3,159

\* Refer to Appendix 2-8 for volume calculations and location of soil.

#### **232.200 Poor Topsoil**

Topsoil that is of an insufficient quantity, or of poor quality (for sustaining vegetation) will be removed as a separate layer and segregated. Such operations will be done with approval of the Division, and in compliance with R614-301-233.100 (Section 233.100).

#### **232.300 Thin Topsoil**

Topsoil to be removed that is less than 6 inches thick will be removed with the immediately underlying unconsolidated materials. This material mixture will be treated as topsoil.

#### **232.400 Minor Disturbances Not Requiring Topsoil Removal**

**Small Structures.** Topsoil will not be removed prior to construction that would result in only minor disturbances. Such construction activity includes work on small structures such as power poles, signs, fence lines, and other small structures.

**Vegetation.** The operator will not remove topsoil for minor disturbances where such activity will not destroy vegetation or cause erosion.

#### **232.500 Subsoil Segregation**

The B and C soil horizons removed during construction of the site will be stockpiled as described in Section 231.400.

#### **232.600 Timing**

Soil removal will take place after all vegetation that could interfere with soil salvage has been removed. Surface disturbance activities will take place after the topsoil has been removed.



During reclamation, the topsoil will be allowed to settle and attain equilibrium with its natural environment. This procedure will be followed for all areas in which facilities such as ancillary road beds, mine pads, and building sites are to be abandoned.

Based on the results of the sampling and analysis of soil test pits TP-1, 4, 5, 6, 7, 8, and 9 and the description of pits 14 and 14A, approximately 27,450 CY of topsoil/growth media will be available to be distributed on reclaimed surfaces within the disturbed area boundary (Appendix 2-6). An estimated 15.2 acres within the disturbed area will receive topsoil. Based on the estimated quantity of available topsoil and the area to be covered, approximately 13.3 inches of topsoil will be placed in the reclaimed areas.

The Pace Canyon topsoil (approximately 18") will be distributed to the disturbed areas illustrated on Plate PC5-5. Topsoil will not be distributed on the realigned road segment or topsoil stockpiles. The area above the portal and the channel diversion area will have topsoil stripped and stockpiled adjacent to these areas temporarily. This topsoil will be surrounded with a silt fence for protection until the soil can be replaced, mulched, gouged and reseeded. The replacement of the temporarily stored topsoil will follow the completion of the construction of the reclamation diversion (PCRD-1). Plate 7-5A in Appendix 7-12, shows the location of soil/vegetation treatments at the fan facility.

**Compaction.** To prevent compaction of topsoil, soil moving equipment will refrain from unnecessary operation over spread topsoil. Front-end-loaders and other wheel mounted equipment may be used to transport and dump topsoil. However, to minimize compaction, only track-mounted equipment (e.g. bulldozers, trackhoes) will be used to spread the topsoil. The topsoil will be loosened prior to seeding as described in Section 341.200 of this M&RP.

**Erosion.** Care will be exercised to ensure the stability of topsoil on graded slopes to guard against erosion during and after topsoil application. Erosion control measures may include but not be limited to surface roughing and deep gouging.

Canyon Fuel Company, LLC  
SCM/Dugout Canyon Mine

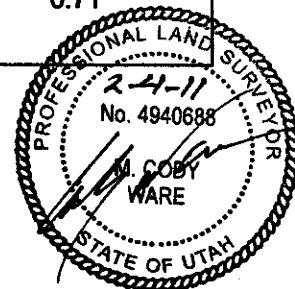
Mining and Reclamation Plan  
February 2011

#### **APPENDIX 5-6**

Reclamation Bond Estimate

**TABLE 1-2**  
**Disturbed Acres by Well Site**

<b>Well Site</b>	<b>Permitted Disturbed Acres</b>	<b>Surveyed Disturbed Acres</b>
<b>G-1</b>	<b>0.6</b>	<b>Not Constructed</b>
<b>G-2</b>	<b>1.21</b>	<b>0.45</b>
<b>G-3</b>	<b>0.97</b>	<b>0.51</b>
<b>G-4</b>	<b>0.85</b>	<b>0.39</b>
<b>G-5</b>	<b>0.75</b>	<b>0.42</b>
<b>G-6</b>	<b>0.32</b>	<b>0.59</b>
<b>G-7</b>	<b>1.25</b>	<b>0.49</b>
<b>G-8</b>	<b>0.9</b>	<b>Not Constructed</b>
<b>G-9</b>	<b>2.2</b>	<b>0.31</b>
<b>G-10</b>	<b>1.7</b>	<b>0.29</b>
<b>G-11</b>	<b>1.6</b>	<b>0.32</b>
<b>G-12</b>	<b>2</b>	<b>0.32</b>
<b>G-13</b>	<b>2.75</b>	<b>0.44</b>
<b>G-14</b>	<b>2</b>	<b>0.40</b>
<b>G-15</b>	<b>2.5</b>	<b>0.77</b>
<b>G-16</b>	<b>2</b>	<b>0.64</b>
<b>G-17</b>	<b>1.25</b>	<b>Not surveyed</b>
<b>G-18</b>	<b>1.4</b>	<b>0.70</b>
<b>G-19</b>	<b>2.3</b>	<b>0.52</b>
<b>G-22 and Access Road</b>	<b>3.5</b>	<b>1.79</b>
<b>G-25</b>	<b>1.8</b>	<b>0.60</b>
<b>G-26</b>	<b>1.8</b>	<b>0.60</b>
<b>G-29</b>	<b>2</b>	<b>Not Constructed</b>
<b>G-30</b>	<b>2</b>	<b>0.93</b>
<b>G-31</b>	<b>1.75</b>	<b>0.71</b>



## Bonding Calculations

## Direct Costs

Subtotal Demolition and Removal	\$1,162,693.00
Subtotal Earthwork - Backfilling and Grading	\$812,380.00
Subtotal Revegetation	\$335,065.00
Direct Costs	\$2,310,138.00

## Indirect Costs

Mob/Demob	\$231,014.00	10.0%
Contingency	\$115,507.00	5.0%
Engineering Redesign	\$57,753.00	2.5%
Main Office Expense	\$157,089.00	6.8%
Project Mainagement Fee	\$57,753.00	2.5%
Subtotal Indirect Costs	\$619,116.00	26.8%

## Total Cost

\$2,929,254.00

Escalation factor

0.005

Number of years

5

Escalation

\$73,967.00

Reclamation Cost Escalated

\$3,003,221.00

Reclamation Cost (rounded to nearest \$1,000)  
2015 Dollars

\$3,003,000.00

Bond Amount in 2010 dollars

\$3,550,000.00

Difference Between Cost Estimate and Bond  
Percent Difference

\$547,000.00

18.22%

Description	Cost
Mine Belt BC-1 No 1	23106
Transfer Building No 2	42445
Feed Belt BC 2 No3	16451
Stack Tubes 2 No4	4914
Head House 1 No 5	7967
Transfer Belt BC 2 No 6	10481
Head House 2 No 7	1940
Reclaim Tunnel No 8	44494
Reclaim Belt BC 4 No 9	14435
Escape Tunnel 60 inch No 10	1133
Crusher Building No 11	37557
Truck Loadout Belt BC 5 No 12	11979
Truck Loadout and Scale No 13	31078
Bathhouse/Shop/Warehouse No 14	151606
Substation No 15	1984
Power Lines and Poles No 16	1958
Retaining Wall No 17	936
Gabion Wall No 18	23533
Pump House No 19	3503
Paved Road No 20	167700
Stream Culvert 72 inch No 21	4193
Water Tanks No 22	3842
Rock Dust Bin No 23	1340
Fuel Tank and Fuel Station No 24	578
Holding Tank No 25	335
Ventilation Fan No 26	2689
Magnet No 27	940
Water System No 28	78482
Sewage System No 29	26303
Storage Containers (8) No 30	2400
Gilson Well No 31	2190
Switch House No 32	57
Portals No 33	26000
Storage Bolts & Bits	3341
Storage Building No 35	27302
Sampling System No 36	12199
Stoker Storage Bin No 37	1099
Substation No 2 No 38	3328
Gabion Baskets No 39	1091
Pace Fan Culvert No 40	1726
Pace Fan Generator no 41	22487
Pace Fan Portal no 42	5200
Refuse Site No 43	9783
Degas Well G2	11604
Degas Well G3	8088
Degas Well G4	8265
Degas Well G5	10835
Degas Well G6	8585
Degas Well G7	11731
Degas Well G9	10953
Degas Well G10	11240
Degas Well G11	9487
Degas Well G12	7973
Degas Well G13	12444
Degas Well G14	10375
Degas Well G15	11019
Degas Well G16	10289
Degas Well G17	10125
Degas Well G18	18834
Degas Well G19	12311
Degas Well G31	23458
AMV Road	50430
Degas Well G22 & Road	20545
Degas Well G25	12107
Degas Well G26	11417
Degas Well G-29	12017
Degas Well G-30	12456
Total	1162693

23106



Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Transfer Building No. 2																			
	Structure's Demolition Cost	16 Steel Bldg. include 20 mi haul - 2011	02 41 16 13 0020	0.31 /CF							104618					CF	0.35	104618 CF		32432
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental 01 54 33 5300		508 /day																
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy - 2011	Triv	\$52.25 /HR																
	Disposal Cost Steel																			
	Subtotal																			
	Equipment & Disposal Cost																			
	Demolition Cost																			
	Equipment & Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemol	11.03 /CY																
	Concrete's Vol. Demolished																			
	Loading Cost	Front End Loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY																
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	508 /day																
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY																
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			42445

Ref	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Feed Belt BC 2 No3																			
	Structure's Demolition Cost	1/4 Steel Blipy/ include 20 mi haul - 2011	02 41 16 13 0020	0.31	CF						47.38					CF	0.35	47.38 CF		14706
	Rubble's Weight (exclude steel)																	615 CY		
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 18 ton (12 CY) 400 HP Rental 01 54 33 5300	Triv		506 /day														1.9 DAY	961
	Transportation Cost Steel Truck Drive	Truck Driver Heavy - 2011			\$52.23 /hr														15 HR	784
	Disposal Cost Steel																			16451
	Subtotal																			
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			16451

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Steel Tubes 2 No4																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (excl. steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	Concrete Demo 1		11.03 /CY							158								1743
	Concrete's Vol. Demolished				1.06 /CY															217
	Loading Cost	Front End Loader 3 CY - 2011			31.23 16 42 1601															1078
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011			01 54 33 5300															1876
	Disposal Costs	Concrete Onsite disposal - 2011			02 41 16 17 4200															4814
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			4814

Ref	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Head House 1 No 5																			
	Structure's Demolition Cost	LG Steel Bldg include 20 mi haul - 2011	02 41 16 13 0020	0.31/CF							23878					CF	0.35	23878 CF		7402
	Structure's Vol Demolished																	310 CY		
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											10				TON		10 TON		
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental	01 54 33 5300	506 /day																304
	Transportation Cost Steel Truck Drive	Truck Driver Heavy - 2011	11m	\$52.25 /HR																281
	Disposal Cost Steel																			7967
	Subtotal																			
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Transfer Bel BC 2 No 6																			
	Structure's Demolition Cost										30000					CF	0.35	30000 CF		5300
	Rubble's Weight (excludes steel)	1g Steel Bldg include 20 m haul - 2011	02 41 16 13 0020	0.31	/CF													389 CY		
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental 01 54 33 5300			508 /day															
	Transportation Cost Steel Truck Drive	Truck Driver Heavy - 2011	Triv		\$52.25 /HR															
	Disposal Cost Steel																			
	Subtotal																			10481
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			10481

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Head House 2 No 7																			
	Structure's Demolition Cost	1/2 Steel Bldg Include 20 mi haul - 2011	02 41 16 13 0020	0.31 /CF							4436					CF	0.35	4436 CF	58 CY	1375
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 18 ton (12 CY) 400 HP Rental - 2011	01 54 33 5300	506 /day											0.6	DAY		0.6 DAY	5 HR	304
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy - 2011	Triv	\$52.25 /HR											5	HR				261
	Disposal Cost Steel																			1640
	Subtotal																			
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1940



Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Reclaim Tunnel No 6																			
	Structure's Vol. Demolished	1/4 Steel Bldg. include 20 mi haul - 2011	02 41 16 13 0020	0.31 /CF							18774					CF	0.35	18774 /CF		5820
	Rubble's Weight (exclude steel)																	243 /CY		
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											32				TON		32 /TON		1012
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	01 54 33 5500	508 /day											2	DAY		2 /DAY		1012
	Transportation Cost Steel Truck Drive	Truck Driver Heavy - 2011	Thv	\$52.23 /hr											16	HR		16 /hr		836
	Disposal Cost Steel																			7668
	Subtotal																			
	Equipment's Disposal Cost																			
	Disassembling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition											1182								13037
	Demolition Cost	Concrete demolition	Concrete/Demol	11.03 /CY																
	Concrete's Vol. Demolished																			
	Loading Cost	Front End Loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY																1629
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5500	506 /day																8096
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY																14064
	Subtotal																			36828
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			

Ref	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Reclaim Belt BC 4 No 9																			
	Structure's Demolition Cost	16 Steel Blug include 20 mi haul - 2011	02 41 16 13 0020	0.31 /CF							35180					CF	0.35	35180 CF		10806
	Structure's Vol Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	01 54 33 5300	506 /day																
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy - 2011	Trmv	\$62.25 /HR																
	Disposal Cost Steel																			
	Subtotal																			13216
	Equipment & Disposal Cost																			
	Dismantling Cost																			
	Equipment & Vol Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemo1	11.03 /CY																
	Concrete's Vol Demolished																			
	Loading Cost	Front End Loader 3 CY - 2011	31 23 16 42 1801	1.06 /CY																
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	506 /day																
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY																
	Subtotal																			1219
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			14435

Ref	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Escape Tunnel 60 inch No 10																			
	Structure's Vol Demolished	Ug Steel Bldg/ include 20 mi haul - 2011	02 41 16 13 0020	0.31	ICF						2827					CF	0.35	2827	CF	876
	Rubble's Weight (exclude steel)																	37	CY	
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	01 54 33 5300	508	day									0.3		DAY		0.3	DAY	132
	Transportation Cost Steel Truck Drive	Truck Driver Heavy - 2011	11m	\$52.25	HR									2		HR		2	HR	105
	Disposal Cost Steel																			1133
	Subtotal																			
	Equipment's Disposal Cost																			
	Disposal Cost																			
	Equipment's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Cost																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Cost																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Cost																			
	Subtotal																			
	Total																			1133

Ref	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Crusher Building No 11																			
	Structure's Vol Demolished	19 Steel Bldg/ include 20 mt trail - 2011	02 41 16 13 0020	0.31	/CF						93305					CF	0.35	93305 CF		28825
	Rubble's Weight (excludes steel)																	1210 CY		
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											100							100 TON	
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental	01 54 33 5300	508	/day									6.3		DAY		6.3 DAY		3188
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy - 2011	Triv	\$52.25	HR									50		HR		50 HR		2613
	Disposal Cost Steel																			34726
	Subtotal																			
	Equipment's Disposal Cost																			
	Demolition Cost																			
	Equipment's Vol Demolished																			
	Loading Costs																			
	Transport Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemol	11.03	/CY						91								91 CY	1004
	Concrete's Vol Demolished																			
	Loading Cost	Front End Loader 3 CY - 2011	31 23 16 42 1601	1.96	/CY														118 CY	125
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	508	/day														1.23 DAYS	622
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	8.15	/CY														118 CY	1080
	Subtotal																			2831
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			37557

[illegible]

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Truck Loadout and Scale No 13	Lo Steel Bldg/ include 20 mi haul - 2011	02 41 16 13 0020	0.31 /CF							74976					CF	0.35	74976 CF 972 CY		23243
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel											50				TON		50 TON		
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental	01 54 33 5300	506 /day											3.1	DAY		3.1 DAY		1569
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy - 2011	Triv	\$52.25 /HR											25	HR		25 HR		1306
	Disposal Cost Steel																			
	Subtotal																			26118
	Equipment & Disposal Cost																			
	Demolition Cost																			
	Equipment & Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Subtotal																			
	Concrete Demolition	Concrete demolition	Concrete/Demol	11.03 /CY							159					CY	1.3	159 CY 207 CY 207 CY		1754 218 1093
	Demolition Cost																			
	Concrete's Vol. Demolished	Front End Loader 3 CY - 2011	31 23 16 42 1801	1.06 /CY																
	Loading Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	506 /day																
	Transportation Cost	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY																
	Disposal Costs																			4960
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			31078



Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Bathhouse/Shop/Warehouse No 14	Lg Steel Bldg include 20 m haul - 2011	02 41 16 13 0020	0.31 /CF							416365					CF	0.2	416365 CF		129073
	Structure's Vol. Demolished																	3084 CY		
	Rubber's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																	3084 CY		0
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											107								
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental 101 54 33 5300	508 /day											6.7		DAY		6.7 DAY		3390
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy - 2011	TMV	\$52.25 /HR										54		HR		54 HR		2822
	Disposal Cost Steel																			135285
	Subtotal:																			
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal:																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemol	11.03 /CY							524					CY	1.3	524 CY		5780
	Concrete's Vol. Demolished	Front End Loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY														681 CY		722
	Loading Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	506 /day														7.08 CY		3588
	Transportation Cost	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY														681 CY		6231
	Disposal Costs																			16321
	Subtotal:																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal:																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal:																			
	Disposal Costs																			
	Subtotal:																			
	TOTAL																			151606

Ref	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Substation No 15										4000					CF			4000 CF	1240
	Structure's Demolition Cost	1g Steel Bldg/ include 20 mt haul - 2011	02 41 16 13 0020	0.31/CF													0.35	52 CY		
	Structure's Vol Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																	52 CY		0
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental	01 54 33 5300	506/day																
	Transportation Cost Steel Truck Drive	Truck Drive, Heavy - 2011	TMV	\$52.25 HR																1240
	Disposal Cost Steel																			
	Subtotal																			
	Equipment & Disposal Cost																			
	Dismantling Cost																			
	Equipment & Vol Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemol	11.03/CY							24					CY		1.3	24 CY	285
	Concrete's Vol Demolished																			33
	Loading Cost	Front End Loader, 3 CY - 2011	31 23 16 42 1601	1.06/CY															31 CY	162
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	506/day															0.32/DAYS	284
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15/CY															31 CY	744
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1984

Ref	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Power Lines and Poles No 16																			
	Structure's Demolition Cost	Dugout Powerline	Dugout 1	0.23 /FT		1937										FT		1937 FT		446
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			446
	Subtotal																			
	Power Poles																			
	Equipment's Disposal Cost	Dugout Power Poles	Dugout 2	126 /EA												EA		12 EA		1512
	Dismantling Cost																			
	Equipment's Vol Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			1512
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1958

[illegible]

Rock and soil from gabion walls will be used in reclamation to rebuild the slope, soil material will not be hauled from site. 6'X3'X1' gabion basket mesh calculation is 0.67 CY per panel to be hauled as waste - 770 panels X 0.67 CY = 513 CY waste

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Pump House No 19																			
	Structure's Vol. Demolished	Lg Steel Bldg. include 20 m haul - 2011	02 41 16 13 0020	0.31 /CF							2219					CF		2219	CF	686
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											5				TON				
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY 400 HP Rental 101 54 33 5300		508 /day										0.3		DAY		0.3	DAY	152
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy - 2011	101 54 33 5300	\$52.23 /HR										2		HR		2	HR	103
	Disposal Cost Steel																			
	Subtotal																			945
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemol	11.03 /CY							82					CY		82	CY	904
	Concrete's Vol. Demolished																1.3	107	CY	113
	Loading Cost	Front End Loader 3 CY - 2011	31 23 18 42 1601	1.08 /CY														1.11	DAVS	582
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	508 /day														107	CY	979
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY																2568
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			3503

Demolition Costs

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Paved Road No 20																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (excludes steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Asphalt Demolition																			
	Demolition Cost	Demolish, Remove Pavement - 2011	02 41 13 17 5050	8.6 /SY						19500						SY		19500	SY	167700
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			167700
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			167700

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Stream Culvert 12 inch No 21																			
	Excavate Culvert	Lg Steel Bldg/ include 20 mi haul - 2011	02 41 16 13 0020	0.31	ICF	2350	12	12								CF		12533	CF	3885
	Backfill Culvert					2350	12	12								CF		12533	CF	0
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											94				TON		94	TON	
	Truck's Capacity																			
	Haulage	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	01 54 33 5300	508/day											5.9	DAY		5.9	DAY	308
	Transportation Cost Steel Truck	Truck Driver Heavy - 2011	TRV	\$52.25	HR									4.7	HR			4.7	HR	0
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			4193
	Subtotal																			
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			4193



Ref	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Water Tanks No 22																			
	Structure's Demolition Cost																			
	Rubble's Weight (exclude steel)		02 41 16 13 0020	0.31 /CF							241					CF	0.35	241 CF	3 CY	75
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											39				TON			39 TON	
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			2282
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			

Ref	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Rock Dust Bin No 23																			
	Structure's Demolition Cost	16 Steel Bldg include 20 m haul - 2011	02 41 16 13 0020	0.31 /CF							2265					CF	0.35	2265 CF	29 CY	702
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	01 54 33 5300	508 /day																152
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy - 2011	Triv	\$52.25 /HR																105
	Disposal Cost Steel																			959
	Subtotal																			
	Equipment & Disposal Cost																			
	Demolition Cost																			
	Equipment's Vol Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemol	11.03 /CY							12					CY				132
	Concrete's Vol Demolished																			
	Loading Cost	Front End Loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY																127
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	508 /day																146
	Disposal Costs	Concrete Curbs disposal - 2011	02 41 16 17 4200	9.15 /CY																381
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1340

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit /CF	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Fuel Tank and Fuel Station No 24																			
	Structure's Demolition Cost	1g Steel Bldg include 20 mi haul - 2011	02 41 16 13 0020	0.31 /CF															0 CF	
	Rubble's Weight (exclude steel)																		0 CY	
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																		0 TON	
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	01 54 33 5300	506 /day															0 DAY	
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy - 2011	Trn	\$57.25 /HR															0 HR	
	Disposal Cost Steel																			
	Subtotal																			
	Equipment & Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemo1	11.03 /CY															18.66 CY	206
	Concrete's Vol Demolished																		24 CY	25
	Loading Cost	Front End Loader 3 CY - 2011	31 23 16 42 1801	1.06 /CY															24 CY	127
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	506 /day															24 CY	220
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY																578
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			578

Tanks belong to Pierce Oil not to Dugout Canyon Mine, therefore they will be hauled from site by owner

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Holding Tank No 25																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			335
	Equipment & Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			335



Demolition Costs

Revised January 2011

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Magnet No 27																			
	Structure's Demolition Cost	Steel Bid Large	02 41 16 13 0020		0.31 /CF						35					CF		35 CF		11
	Load, Transport and Return Trip	Nelson Winch Truck - 2010 Rate Steel		\$150.00	HR										2	HR		21 HR		300
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton payload	01590 200 5303		\$17.68 /day										0.1	DAY		0.1 DAY		52
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy	Triv	\$49.15	HR										1	HR		11 HR		49
	Disposal Cost Steel																			412
	Subtotal																			
	Equipment & Disposal Cost																			
	Dismantling Cost																			
	Equipment & Vol Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition	Concrete demolition	ConcreteDemol		11.03 /CY						17									188
	Demolition Cost																			
	Concrete's Vol Demolished	Front End Loader 3 CY - 2011	31 23 16 42 1801		1.06 /CY															23
	Loading Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300		506 /day															116
	Transportation Cost	Concrete Onsite disposal - 2011	02 41 16 17 4200		9.15 /CY															201
	Disposal Costs																			528
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			940

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Water System No 28																			
	Excavate Pipe	Excavation Bulk Bank - 3 CY - 2011	31 23 16 42 0300	1.62 /CY		8450		2	4							FT		2504 CY		4056
	Pipe Removal	Pipe 12" Diameter Demolition - 2011	02 41 13 38 0400	8.55 /E		8450										FT		8450 FT		72248
	Backfill Trench	Backfill Trench 50' Haul - 2011	31 23 23 14 4020	0.87 /CY		8450		2	4									2504 CY		2178
	Structure's Vol Demolished																			
	Structure's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			78482
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Disposal Cost																			
	Transportation Cost																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Disposal Cost																			
	Transportation Cost																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Disposal Cost																			
	Transportation Cost																			
	Subtotal																			
	Total																			78482

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Sewage System No 29																			
	Excavate Pipe	Excavation Bulk Bank 3 CY - 2011	31 23 16 42 0300	1.62/CY		2832		2	4							FT		839 CY	1359	
	Pipe Removal	Pipe 12" Diameter Demolition - 2011	02 41 13 38 0480	8.55/LF		2832										FT		2832 FT	24214	
	Backfill Trench	Backfill Trench 50' Haul - 2011	31 23 23 14 4020	0.87/CY		2832		2	4							FT		839 CY	730	
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			26303
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			26303



Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Storage Containers (8) No 20																			
	Load Transport and Return Trip	Nelson Winch Truck - 2010 rate sheet		\$150.00	HR														16 HR	2400
	Structure's Demolition Cost																			
	Structure's Vol Demolished																			
	Rubble's Weight (excludes steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			2400
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			2400

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Gilson Well No 31																			
	Structure's Vol. Demolished	Lg Steel Bldg/ include 20 m haul - 2011	02 41 16 13 0020	0.31 /CF							800					CF	0.35	800 CF		248
	Rubble's Weight (exclude steel)																	10 CY		
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	01 54 33 5300	506 /day										0.03		DAY		0.03 DAY		15
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy - 2011	Timv	\$52.25 /HR										0.2		HR		0.2 HR		10
	Disposal Cost Steel																			
	Subtotal																			273
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							3					CY		3 CY		681
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemo1	11.03 /CY							55					CY	1.3	53 CY		607
	Concrete's Vol. Demolished	Front End Loader 3 CY - 2011	31 23 16 42 1601	1.08 /CY														72 CY		76
	Loading Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	506 /day														0.75 DAYS		380
	Transportation Cost	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY														72 CY		659
	Disposal Costs																			1722
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete's Vol. Demolished																		
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			2190

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Switch House No 32																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											1								
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Aluminum Shed																		
	Transportation Cost Steel Truck Drive	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	OT 54 33 5300		506 /day									0.01		DAY		0.01 DAY		5
	Disposal Cost Steel	Truck Driver, Heavy - 2011	THV		\$52.23 /HR									1		HR		1 HR		52
	Subtotal																			57
	Equipment & Disposal Cost																			
	Dismantling Cost																			
	Equipment & Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Cost																			
	Subtotal																			0
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Cost																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Cost																			
	Subtotal																			
	Total																			57

Ref	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Portable No 13																			
	Structure's Demolition Cost	Seal Portals	AML1	5200	EA											5 EA			5 EA	26000
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			26000
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			26000

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Two Storage Bldgs for Bolls, Drills and Trailer Awing No 34																			
	Structure's Demolition Cost	Lg Steel Bldg/ include 20 mi haul - 2011	02 41 16 13 0020	0.31 /CF							3272					CF	0.35	3272 CF		1014
	Rubble's Vol. Demolished																	42 CY		
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											6				TON		6 TON		
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	01 54 33 5300	506 /day										0.44		DAY		0.44 DAY		223
	Transportation Cost Steel Truck Drive	Truck Driver/ Heavy - 2011	11m	\$52.25 /HR										4		HR		4 HR		209
	Disposal Cost Steel																			
	Subtotal																			1446
	Equipment & Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs														5	HR		5 HR		650
	Transport Costs/Office Trailer																			
	Disposal Costs																			
	Subtotal																			650
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemo1	11.03 /CY							39.99					CY		39.99 CY		441
	Concrete's Vol. Demolished																			
	Loading Cost	Front end loader 3 CY	31 23 16 42 1601	1.06 /CY														52 CY		55
	Transportation Cost	12 CY (16 Ton) Dump Truck 1/2 mi. ind. trip	01 54 33 5300	506 /day														0.54 DAYS		273
	Disposal Costs	On site disposal	02 41 16 17 4200	9.15 /CY														52 CY		476
	Subtotal																			1245
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			3341

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Storage Building No 35																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished	LG Steel Bldg/ include 20 m haul - 2011	02 41 16 13 0020	0.31 /CF							2284					CF	0.35	2284 CF		708
	Rubble's Weight (exclude steel)																	30 CY		
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											6				TON		6 TON		
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	01 54 33 5300	508 /day										0.4		DAY		0.4 DAY		202
	Transportation Cost Steel Truck Drive	Truck Driver Heavy - 2011	Triv	\$52.25 /HR										3		HR		3 HR		157
	Disposal Cost Steel																			
	Subtotal																			1067
	Equipment's Disposal Cost																			
	Demolition Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemol	11.03 /CY							38.4					CY		38.4 CY		424
	Concrete's Vol. Demolished																1.3	50 CY		53
	Loading Cost	Front End Loader 3 CY - 2011	31 23 16 42 1601	1.08 /CY														50 CY		53
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	508 /day														50 CY		25300
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY														50 CY		458
	Subtotal																			28235
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			27302

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Sampling System No 36																			
	Structure's Demolition Cost																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Truck's Capacity																			
	Transportation Cost Steel Truck	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	01 54 33 5300	508 /day										0.14		DAY		0.14 DAY		71
	Transportation Cost Steel Truck Drive	Truck Drive, Heavy - 2011	1111	\$52.25 /HR										1.1		HR		1.1 HR		57
	Disposal Cost Steel																			
	Subtotal																			128
	Equipment & Disposal Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemol	11.03 /CY																
	Concrete's Vol. Demolished																			
	Loading Cost	Front End Loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY																
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	508 /day																
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY																
	Subtotal																			12071
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Stoker Storage Bin No 37																			
	Structure's Demolition Cost																			
	Structure's Vol. Demolished																			
	Rubble's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			
	Subtotal																			
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemol	11.03/CY																
	Concrete's Vol. Demolished																			
	Loading Cost	Front End Loader 3 CY - 2011	31.23 16.42 1651	1.06/CY																
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5320	506 /day																
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 2200	815 /CY																
	Subtotal																			1099
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1099



Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Substation No 2 No 38																			
	Structure's Demolition Cost	Mixture of demolition materials - 2011	02 41 16 13 0100	0.33 /CF							4000					CF	0.35	4000 CF		1320
	Structure's Vol. Demolished																	52 CY		
	Truck's Weight (exclude steel)																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel	Waste Logistics - 2011		4.5 /CY															52 CY	234
	Steel's Weight																			
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			1554
	Subtotal																			
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition	Concrete demolition	ConcreteDemo1	11.03 /CY							57					CY	1.3	57 CY		628
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost	Front End Loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY															74 CY	78
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	506 /day															0.77 DAYS	390
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY															74 CY	677
	Subtotal																			1774
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			3328



Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Page 1 of 1 Culvert No 40																			
	Excavate Culvert	Excavation Bulk Bank 3 CY - 2011	31 23 16 42 0300	1.62 /CY		585	3	8										520 CY	842	
	Backfill Culvert	Backfill Trench Minimal Haul 2 1/4 CY	31 23 16 42 1601	1.01 /CY		585	3	8										520 CY	525	
	Truck's Capacity																			
	Haulage	Transportation Cost Non Steel Truck																		
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight											8.5				ton				
	Truck's Capacity																			
	Haulage	Transportation Cost Steel Truck																		
	Transportation Cost Steel Truck Drive	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	01 54 33 5500	508 /day											0.4	Day		0.4 Day	202	
	Disposal Cost Steel	Truck Driver, Heavy - 2011	Trnv	\$52.25 /HR											3	HR		3 HR	157	
	Subtotal																			1726
	Equipment's Disposal Cost																			
	Dismantling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			1726

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Page Fan Generator no 41																			
	Structure's Vol. Demolished	Lg Steel Bldg. include 20 mi haul - 2011	02 41 16 13 0020	0.31 /CF		25	25	12								CF	0.35	7500 CF		2325
	Truck's Capacity																			
	Haulage																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Disposal Cost Steel																			
	Filler Mesh	Waste Logistics/Haul 30 CY - 2011	Waste Logistics	4.5 /CY								0.7				Ton		50 CY		270
	Haulage	Truck dump 16 ton (12 CY) 400 HP Rental - 2011	01 54 33 5300	506 /day											1	DAY		1 DAY		506
	Transportation Cost Steel Truck Drive	Truck Driver, Heavy - 2011	THV	\$52.25 /HR											8	HR		8 HR		418
	Subtotal																			3519
	Equipment's Salvage																			
	Outing	Salvage - Loader/Haul - 3 CY/4 Tons - 2011	Nielson Construct	232.75 /HR								35				Ton		8.75 HR		2037
	Fan	Salvage - Crane/Haul - 2011	Nielson Construct	323 /HR								6				Ton		6 HR		1938
	Portal plate liner	Salvage - Crane/Haul - 2011	Nielson Construct	323 /HR								1.2				Ton		3 HR		969
	Total steel weight																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Subtotal																			4944
	Portal plate liner																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemol	11.03 /CY							70					CY		70 CY		772
	Concrete's Vol. Demolished																			
	Loading Cost	Front End Loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY														91 CY		96
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	506 /day														0.95 DAY		481
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY														91 CY		833
	Subtotal																			2182
	Generator Pad																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemol	11.03 /CY							128					CY		128 CY		1412
	Concrete's Vol. Demolished																			
	Loading Cost	Front End Loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY														146 CY		176
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	506 /day														1.73 DAY		875
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY														166 CY		1519
	Subtotal																			3982
	Fan Building																			
	Concrete Demolition																			
	Demolition Cost	Concrete demolition	ConcreteDemol	11.03 /CY							252					CY		252 CY		2780
	Concrete's Vol. Demolished																			
	Loading Cost	Front End Loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY														328 CY		348
	Transportation Cost	Truck dump 16 ton (12 CY) - 2011	01 54 33 5300	506 /day														3.42 DAY		1731
	Disposal Costs	Concrete Onsite disposal - 2011	02 41 16 17 4200	9.15 /CY														328 CY		3001
	Subtotal																			7960
	Total																			22487

Nielson Construction cost include 30 Ton crane w/operator \$123.50 hr, 60 Ton crane w/operator \$152 hr, truck w/driver and trailer \$128.25 hr and pickup & rigger \$42.75 hr, actual invoice 10/19/10

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Pace Fan Portal no 42																			
	Seal Portal	Seal Portals	AML 1 - 2011	5200	EA											1 EA			1 EA	5200
	Structure's Vol. Demolished																			
	Rubble's Weight (excl. steel)																			
	Trucks Capacity																			
	HAULAGE																			
	Transportation Cost Non Steel Truck																			
	Transportation Cost Non Steel Drive																			
	Disposal Cost Non Steel																			
	Steel's Weight																			
	Trucks Capacity																			
	HAULAGE																			
	Transportation Cost Steel Truck																			
	Transportation Cost Steel Truck Drive																			
	Disposal Cost Steel																			5200
	Subtotal																			
	Equipment's Disposal Cost																			
	Dismanling Cost																			
	Equipment's Vol. Demolished																			
	Loading Costs																			
	Transport Costs																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Concrete Demolition																			
	Demolition Cost																			
	Concrete's Vol. Demolished																			
	Loading Cost																			
	Transportation Cost																			
	Disposal Costs																			
	Subtotal																			
	Total																			5200



Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G2																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						378					CY		378 CY		401
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						110					CY		110 CY		117
	Subtotal																			516
	Plug Well Casing	Concrete Ready Mix 6000 psi	033 10 220 0412	227	/CY						20					CY		20 CY		4540
	Subtotal																			4540
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						3104					CY		3104 CY		3290
	Subtotal																			3280
	Fence																			2352
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96	/LF	1200										FT		1200 FT		2352
	Subtotal																			2352
	Support Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5	hr										16	hr		16 hr		904
	Subtotal																			904
	Total																			11604

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G3																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06/CY							412					CY		412 CY		437
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06/CY							110					CY		110 CY		117
	Subtotal																			554
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1182					CY		1182 CY		1253
	Subtotal																			1253
	Fence																			1253
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96 /LF		542										FT		542 FT		1062
	Subtotal																			1062
	Support Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5 /hr											8	hr		8 hr		452
	Subtotal																			452
	Total																			8086



Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G4																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						218					CY		218 CY		231
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						110					CY		110 CY		117
	Subtotal																			348
	Plug Well Casing	Concrete Ready Mix 6000 psi	03310 220 0412	227	/CY						21					CY		21 CY		4767
	Subtotal											1100				CY		1100 CY		1166
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY															
	Subtotal																			1166
	Fence																			
	Remove Barbed Wire	Fencing barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96	/LF	551										FT		551 FT		1080
	Subtotal																			1080
	Support Foreman and 4x4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5	hr										16	hr		16 hr		904
	Subtotal																			904
	Total																			8265

Ref	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Soil Factor	Quantity	Unit	Cost
	Degas Well G5																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						818					CY		818 CY		867
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						110					CY		110 CY		117
	Subtotal																			984
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227	/CY						21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						1909					CY		1909 CY		2024
	Subtotal																			2024
	Fence																			
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96	/LF	1100										FT		1100 FT		2156
	Subtotal																			2156
	Support																			
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5	hr										16	hr		16 hr		904
	Subtotal																			904
	Total																			10835

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G6																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							682					CY		682 CY		723
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							110					CY		110 CY		117
	Subtotal																			840
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							792					CY		792 CY		840
	Subtotal																			840
	Fence																			
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96 /LF		860										FT		860 FT		1686
	Subtotal																			1686
	Support																			
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5 hr											8	hr		8 hr		452
	Subtotal																			452
	Total																			8565

Ref	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degs Well G7																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						908					CY		908 CY		962
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						430					CY		430 CY		456
	Subtotal																			1418
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227	/CY						21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						2345					CY		2345 CY		2486
	Subtotal																			2486
	Fence																			2486
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96	/LF	1100										FT		1100 FT		2156
	Subtotal																			2156
	Support																			
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5	hr										16	hr		16 hr		904
	Subtotal																			904
	Total																			11731

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G9																			
	Grade and Backfill	Front and loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							575					CY		575 CY		610
	Fill in Mud Pit	Front and loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							430					CY		430 CY		456
	Subtotal																			1096
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							21					CY		21 CY		4787
	Subtotal																			4787
	Spread Topsoil	Front and loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1574					CY		1574 CY		1668
	Subtotal																			1668
	Fence																			
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96 /LF		1300										FT		1300 FT		2548
	Subtotal																			2548
	Support																			
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5 /hr											16		hr		16 hr	904
	Subtotal																			904
	Total																			10963

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G10																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							922							922 CY		977
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							622							622 CY		659
	Subtotal																			1636
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							21							21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							2344							2344 CY		2485
	Subtotal																			2485
	Fence																			
	Remove Barbed Wire	Fencing, barbed wire, 3 Strand - 2011	02 41 13 50 1650	1.96 /LF							1200							1200 FT		2392
	Subtotal																			2392
	Support																			
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5 /hr														0 hr		0
	Subtotal																			0
	Total																			11240

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Dugout Well G11																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							882							882 CY		935
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							430							430 CY		456
	Subtotal																			1391
	Pug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							21							21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							254							254 CY		269
	Subtotal																			269
	Fence																			
	Remove Barbed Wire	Fencing, barbed wire 3 strand - 2011	02 41 13 90 1650	1.96 /LF		1100												1100 FT		2156
	Subtotal																			2156
	Support																			
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construd	56.5 /hr											16	hr		16 hr		904
	Subtotal																			904
	Total																			9487

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G12																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	ICY						429					CY		429 CY		455
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	ICY						430					CY		430 CY		456
	Subtotal																			911
	Plug Well Casing	Concrete Ready Mix 4000 psi	03310 220 0412	227	ICY						15					CY		15 CY		3405
	Subtotal																			3405
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	ICY						563					CY		563 CY		597
	Subtotal																			597
	Fence																			597
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96	LF	1100										FT		1100 FT		2156
	Subtotal																			2156
	Support																			
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5	hr										16	hr		16 hr		904
	Subtotal																			904
	Total																			7873



Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G13																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						1393					CY		1393 CY		1477
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						430					CY		430 CY		456
	Subtotal																			1933
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227	/CY						21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						2162					CY		2162 CY		2292
	Subtotal																			2292
	Fence																			
	Remove Barbed Wire	Fencing Barbed wire 3 strand - 2011	02 41 13 60 1650	1.96	/L/F	1300										FT		1300 FT		2548
	Subtotal																			2548
	Support																			
	Foreman and 4x4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5	hr										16	hr		16 hr		904
	Subtotal																			904
	Total																			12444

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Spill Factor	Quantity	Unit	Cost
	Degs Well G14																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						429					CY		429 CY		455
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						430					CY		430 CY		456
	Subtotal																			911
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227	/CY						21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						1544					CY		1544 CY		1637
	Subtotal																			1637
	Fence																			
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96	/LF	1100										FT		1100 FT		2156
	Subtotal																			2156
	Support																			
	Foreman and 4x4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5	hr										16	hr		16 hr		904
	Subtotal																			904
	Total																			10375

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Devas Well G15																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1106					CY		1106 CY		1172
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							430					CY		430 CY		456
	Subtotal																			1628
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1475					CY		1475 CY		1564
	Subtotal																			1564
	Fence																			1564
	Remove Barbed Wire	Fencing, barbed wire 3 strand - 2011	02 41 13 60 1650	1.96 /LF		1100										FT		1100 FT		2156
	Subtotal																			2156
	Support																			
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construd	56.5 hr											16	hr		16 hr		904
	Subtotal																			904
	Total																			11019

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well C16																			
	Grate and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							800					CY		800 CY		848
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							430					CY		430 CY		456
	Subtotal																			1304
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1092					CY		1092 CY		1158
	Subtotal																			1158
	Fence																			
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96 /LF		1100										FT		1100 FT		2156
	Subtotal																			2156
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5 hr												hr		16 hr		904
	Subtotal																			904
	Total																			10289

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G17																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							756					CY		756 CY		801
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							430					CY		430 CY		456
	Subtotal																			1257
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							797					CY		797 CY		845
	Subtotal																			845
	Fence																			
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96 /LF		1200										FT		1200 FT		2352
	Subtotal																			2352
	Support																			
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construc	56.5 /hr											16	hr		16 hr		904
	Subtotal																			904
	Total																			10125

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G19																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1393					CY		1393 CY		1477
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							430					CY		430 CY		456
	Subtotal																			1933
	Pug Well Casing	Concrete Ready Mix 8000 psi	00310 220 0412	227 /CY							21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							2037					CY		2037 CY		2159
	Subtotal																			2159
	Fence																			
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96 /LF		1300										FT		1300 FT		2548
	Subtotal																			2548
	Support																			
	Foreman and 4x4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5 /hr											16	hr		16 hr		904
	Subtotal																			904
	Total																			12311

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G18																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							6962					CY		6962 CY		7380
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							430					CY		430 CY		456
	Subtotal																			7836
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							2195					CY		2195 CY		2327
	Subtotal																			2327
	Fence																			2327
	Remove Barbed Wire	Fencing barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96 /LF		1300										FT		1300 FT		2548
	Subtotal																			2548
	Support																			
	Foreman and 4x4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5 /hr											24	hr		24 hr		1356
	Subtotal																			1356
	Total																			18834

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	AW/ROAD																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							15207					CY		15207 CY		16119
	Subtotal																			16119
	Subtotal																			0
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							24374					CY		24374 CY		25836
	Subtotal																			25836
	Subtotal																			0
	Subtotal																			0
	Support																			0
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5 /hr											150	hr		150 hr		8475
	Subtotal																			8475
	Total																			50430



Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G22 and Access Road																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							7386					CY		7386 CY		7829
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							430					CY		430 CY		456
	Subtotal																			8286
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							25					CY		25 CY		5675
	Subtotal																			5675
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							2103					CY		2103 CY		2229
	Subtotal																			2229
	Fence (only pad)																			2548
	Remove Barbed Wire	Fencing barbed wire, 3 Strand - 2011	02 41 13 60 1650	1.98 /LF		1300										FT		1300 FT		2548
	Subtotal																			2548
	Support																			
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5 hr											32	hr			32 hr	1808
	Subtotal																			1808
	Total																			20545

Demolition Costs

Revised January 2011

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Soil Factor	Quantity	Unit	Cost
	Dugout Well G25																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1406					CY		1406 CY		1490
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							430					CY		430 CY		456
	Subtotal																			1946
	Pug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1406					CY		1406 CY		1490
	Subtotal																			1490
	Fence																			
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96 /LF		1300										FT		1300 FT		2548
	Subtotal																			2548
	Support																			
	Foreman and 4x4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5 hr											24	hr		24 hr		1356
	Subtotal																			1356
	Total																			12107

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G26																			
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1080					CY		1080 CY		1145
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							430					CY		430 CY		456
	Subtotal																			1601
	Plug Well Casing	Concrete Ready Mix 6000 psi	03310 220 0412	227 /CY							21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1080					CY		1080 CY		1145
	Subtotal																			
	Fence																			1145
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96 /LF		1300										FT		1300 FT		2548
	Subtotal																			2548
	Support																			
	Foreman and 4X4 Pick	Nelson Construction - 2010	Nelson Construct	56.5 /hr											24	hr		24 hr		1356
	Subtotal																			1356
	Total																			11417

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well C29																			
	Grate and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1363					CY		1363 CY		1445
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							430					CY		430 CY		456
	Subtotal																			1901
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							21					CY		21 CY		4767
	Subtotal																			4767
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1363					CY		1363 CY		1445
	Subtotal																			1445
	Fence																			
	Remove Barbed Wire	Fencing Barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96 /LF		1300										FT		1300 FT		2548
	Subtotal																			2548
	Support																			
	Foreman and 4x4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5 hr											24	hr		24 hr		1356
	Subtotal																			1356
	Total																			12017

Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
Demas Well G30																			
Grades and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1479					CY		1479 CY		1568
Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							430					CY		430 CY		456
Subtotal																			2024
Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227 /CY							21					EA		21 EA		4767
Subtotal																			4767
Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06 /CY							1235					CY		1235 CY		1309
Subtotal																			1309
Fence (only pad)																			
Remove Barbed Wire	Fencing, barbed wire 3 strand - 2011	02 41 13 60 1650	1.96 /LF				1300								FT		1300 FT		2548
Subtotal																			2548
Support																			
Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5 hr												32 hr		32 hr		1808
Subtotal																			1808
Total																			12456

Ref.	Description	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G31	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						8470							8470 CY		8878
	Grade and Backfill	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY						430							430 CY		456
	Fill in Mud Pit	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY															9434
	Subtotal										21							21 CY		4787
	Plug Well Casing	Concrete Ready Mix 8000 psi	03310 220 0412	227	/CY															4901
	Subtotal										4624							4624 CY		4901
	Spread Topsoil	Front end loader 3 CY - 2011	31 23 16 42 1601	1.06	/CY															4901
	Subtotal																			4901
	Fence																			2548
	Remove Barbed Wire	Fencing, barbed wire, 3 strand - 2011	02 41 13 60 1650	1.96	/LF	1300												1300 FT		2548
	Subtotal																			2548
	Support																			1808
	Foreman and 4X4 Pickup	Nelson Construction - 2010	Nelson Construct	56.5	hr										32	hr		32 hr		1808
	Subtotal																			1808
	Total																			23458

		Cost
Facilities Area 01		331555
Facilities Area 02		133361
Stream Channel 03		34868
Refuse Pile 04		300305
Pace Canyon Fan Portal		12291
Subtotal		812380

Dugout Mine Facilities Area 01 Cut and Fill at Mine Site	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq	Total Eq. & Lab Costs	Units	Quantity	Units	Production Rate	Equip. + Labor Time/Dis.	Units	Cost
Equipment														
Rough Grading														
D9R Semi-U EROPS (9-54) (2H2005)	18485	80.3	0.1	55.4	259.26	1	259.26 \$/HR		118169 CY		184 CY/HR	642.2 HR		166497
Finished Grading														
D9R Semi-U EROPS (9-54) (2H2005)	18485	80.3	0.1	55.4	259.26	1	259.26 \$/HR		19926 CY		680 CY/HR	29.3 HR		7596
815F ((6-13) (1H2005))	9615	38.75	0.1	55.4	158.12	1	158.12 \$/HR		58490 CY		876 CY/HR	66.8 HR		10562
CAT 345BL II (10-23)(2nd2005) 2005	15170	66.35	0.1	55.4	223.2	1	223.2 \$/HR		10000 CY		308 CY/HR	32.5 HR		7254
986G Series II EROPS (9-36) (2nd2005)	7170	32.65	0.1	55.4	136.13	1	136.13 \$/HR		8342 CY		204 CY/HR	40.9 HR		5568
Support Personnel and Labor														
CLAB														
5,000 gal H2O Truck Diesel (20-17) (2nd2005)	4980	31.95	0.1	43.3	109.63	1	42.66 \$/HR					642.2 HR		27390
Foreman & 4X4 Pickup Nielson 2010	900	5.4	0.1	0	56.5	1	109.63 \$/HR					642.2 HR		70404
							56.5 \$/HR					642.2 HR		36284
Subtotal														331555



[illegible]

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Dugout Mine Stream Channel 03 Remove Culvert and Restore Channel															
CAT 325BL (10-23)(2nd2005) 2003	9430	39.9	0.1	55.4	158.23	1	158.23 \$/HR		14400 CY		310 CY/HR		46.5 HR		7356
CLAB					49	0.5	24.5 \$/HR						46.5 HR		1139
966G Series II EROPS (9-36) (2nd2005)	7170	32.65	0.1	55.4	136.13	1	136.13 \$/HR		1500 CY		204 CY/HR		7.4 HR		1007
CLAB					42.65	0.5	21.33 \$/HR						7.4 HR		136
6X4 70,000lbs 12-18 CY (20-11) (2nd2005)	3725	31.25	0.1	43.3	100.96	1	100.96 \$/HR		7000 CY		50 CY/HR		140 HR		14134
CLAB					49	0.5	24.5 \$/HR						140 HR		3430
Support															
5,000 gal H2O truck Diesel (20-17) (2nd2005)	4990	31.95	0.1	43.3	109.63	1	109.63 \$/HR						46 HR		5043
Foreman & 4X4 Pickup Nelson 2010	900	5.4	0.1	0	56.5	1	56.5 \$/HR						46 HR		2599
Subtotal															34866

[illegible]

	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq	Total Eq. & Lab Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis	Units	Cost
Pace Canyon Fan Portal															
Backfill Shaft															
CAT 325BL (10-23)(2nd2005) 2003	9430	39.9	0.1	55.4	158.23	1	158.23 \$/HR		641 CY		216 CY/HR		3 HR		475
6X4 70,000lbs 12-18 CY (20-1) (2nd2005)	3725	31.25	0.1	43.3	100.96	3	302.88						3 HR		909
Backfill Portal															
DBR Series II (9-54) (2nd2005)	14705	59.75	0.1	55.4	213.03	1	213.03 \$/HR		331 CY		171 CY/HR		1.9 HR		405
Subsoil Placement															
DBR Series II (9-54) (2nd2005)	14705	59.75	0.1	55.4	213.03	1	213.03 \$/HR		4045 CY		90 CY/HR		44.9 HR		9565
Doze On-site Topsoil															
DBR Series II (9-54) (2nd2005)	14705	59.75	0.1	55.4	213.03	1	213.03 \$/HR		2128 CY		480 CY/HR		4.4 HR		937
Subtotal															12291

335065

Ref.	Description	Materials	Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Dugout Mine Vegetation																			
	Soil Preparation	Excavation Bulk Bank 3 CY - 2011	31 23 16 42 0300	1.62 /CY						14.56						AC		23490 CY		38054
	Subtotal																			38054
	Fence	Medel T-Posts 5.5 to 6"	JFA - 2011	\$5.50 EA		340										FT		340 EA		1870
	Silt Fence	Wire Reinforced Silt Fence 3' X100"	CC Hydraulics - 2011	55 100/ft		6800										FT		6800 FT		3740
	Subtotal	Installation Labor - 2011	31 25 14 16 1100	0.58 FT		6800												6800 FT		3944
																				9594
	Seed Mix No 1	Hydro Seeder (equip. & labor) B-81 80MS/Day	Reveg002	19.8 /MSF						13.9						AC		605 MSF		11979
	Hydroseed Material	Dugout Seed Mix No 1	Dugout 07391S	394.75 /AC						13.9						AC		13.9 AC		5487
	Hay Mulch	Hay 1" material only 029105000250	Reveg001	129 /TON						13.9						AC		13.9 ton/AC		1793
	Transplant Area No 1																			
	Area	Dugout Transplant Mix No 1	Dugout 07391T	349 /AC						13.9						AC		13.9 AC		4851
	Transplant Materials	Bare root seedlings, 11" to 16" med soil	02915 400 0552	1.31 EA												#AC		7645 EA		10015
	Transplant Labor																			
	Seed Mix No 2																			
	Hydroseed Equipment and Labor	Hydro Seeder (equip. & labor) B-81 80MS/Day	Reveg002	19.8 /MSF						2.45						AC		107 MSF		2119
	Hydroseed Material	Dugout Seed Mix No 2	Dugout 07392S	711.25 /AC						2.45						AC		2.45 AC		1743
	Hay Mulch	Hay 1" material only 029105000250	Reveg001	129 /TON						2.45						AC		2.45 ton/AC		316
	Transplant Area No 2																			
	Area	Dugout Transplant Mix No 1	Dugout 07391T	349 /AC						2.45						AC		2.45 AC		855
	Transplant Materials	Bare root seedlings, 11" to 16" med soil	02915 400 0562	1.31 EA												#AC		15925 EA		20862
	Transplant Labor																			
	Subtotal																			60020
	Direct Vegetation																			
	Re seeding																			107628
	Assume 25% reveg rate																			15005
	Total																			122833

Ref.	Description	Materials	Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Dugout Mine Refuse Pile																			
	Soil Preparation																			
	Packing	Excavation Bulk Bank 3 CY - 2011	31 23 16 42 0300	1.62 /CY														25168 CY		40772
	Subtotal									15.6										
	Seed Mix No 1																			
	Hydroseed Equipment and Labor	Hydro Spreader (equip. & labor) B-81 80MSF/day	Reveg002	19.8 /MSF						15.6									680 MSF	13464
	Hydroseed Material	Dugout Seed Mix No 1	Dugout 07391S	394.75 /AC						15.6									15.6 AC	6158
	Hay Mulch	Hay 1" material only 029105000250	Reveg001	129 /TON						15.6									15.6 ton/AC	2012
	Transplant Area No 1																			
	Area																			
	Transplant Materials	Dugout Transplant Mix No 1	Dugout 07391T	349 /AC						15.6									15.6 AC	5444
	Transplant Labor	Bare root seedlings, 11" to 16" med. soil	02915 400 0562	1.31 /EA															6240 EA	8174
	Subtotal																			35252
	Re seeding																			
	Assume 25% reveg rate																			8813
	Total																			84637

Ref	Description	Materials	Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Pace Canyon Fan Portal																			
	Soil Preparation																			
	Packing																			
	Subtotal																			
	Seed Mix No. 1																			
	Hydroseed Equipment and Labor																			
	Hydroseed Material																			
	Hay Mulch																			
	Subtotal																			
	Direct Vegetation																			
	Reseeding																			
	Assume 25% reveg rate																			
	Total																			



[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.



[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.



[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

Ref.	Description	Materials	Reference Number	Unit Cost	Unit	Length	Width	Height	Diameter	Area	Volume	Weight	Density	Time	Number	Unit	Swell Factor	Quantity	Unit	Cost
	Degas Well G-29	See Note Below																		
	Soil Preparation	Excavation Bulk Bank 3 CY - 2011	31 23 16 42 0300	1.62 /CY						0.6						AC		968 CY		1588
	Packing																			1588
	Subtotal																			
	Seed Mix No 1																			
	Hydro Mulch	Hydro Spreader (equip. & labor) B-81 80MSF/day	Reveg002	19.8 /MSF						0.6						AC		26 MSF		515
	Hydroseed Material	Hay 1" material only 029105000250	Dugout 07391S	394.75 /AC						0.6						AC		0.6 AC		237
		Dugout Seed Mix No 1	Reveg001	129 /TON						0.6						AC		0.6 ton/AC		155
	Subtotal																			907
	Direct Vegetation																			2475
	Revegetation																			
	Assume 25% reveg rate																			227
	Total																			2702

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.  
As of January 2011 G-29 has not been constructed but if constructed would likely be the same size as G-25 and G-26 pads.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.

[illegible]

Area reflects disturbed acreage as surveyed by Cody Ware of Ware Surveying.



**CHAPTER 6**  
**GEOLOGY**

**M&RP**

## **625 Additional Geologic Information**

It is not anticipated that any additional geologic data will need to be collected for this site. During the drilling of degassification wells geologic data may be collected, refer to Chapter 6 of the Degassification amendment for details.

## **626 Sampling Waivers**

A sampling waiver is not requested at this time for this site.

## **627 Description of the Overburden Thickness and Lithology**

Overburden thickness above the coal seam ranges from approximately 600 feet in the southern portions of the permit area to over 2400 in the northern and northeastern portions (Plate 6-4). Stratigraphically, the overburden consists of the Upper Blackhawk Formation, which contains the coal seams, the Castlegate Sandstone, the Price River Formation, the North Horn Formation, and the Flagstaff Formation as described in Section 624.100 of this M&RP.

## **630 OPERATION PLAN**

### **631 Casing and Sealing of Exploration Holes**

The information addressing regulations for casing and sealing of exploration holes is found in Section 765 of this M&RP. This includes both the temporary and permanent casing and sealing of drilled holes and exploration holes and boreholes.

### **632 Subsidence Monitoring**

Subsidence and subsidence monitoring points are discussed in detail in Section 525 of this M&RP and a map showing the subsidence monitoring locations is provided in the annual report.

## **CHAPTER 2**

### **SOILS**

Valley Authority, BLM - USFS published data, physical and chemical analyses results, field-site trials, or greenhouse tests.

#### **233.400      Testing of Substitute Topsoil**

Only the substitute topsoil used in lieu of, or in conjunction with, on-site overburden and soil will be tested as described in Section 233.300.

### **234      Topsoil Storage**

Soils salvaged from the site will be stockpiled on the site. Refer to Plates RA 5-1 and 7-1 for the stockpile location. The estimated volumes of soil to be stockpiled are presented in RA Table 2-2.

#### **234.100      Topsoil Stockpiling**

Soil removed will be stockpiled for later use in reclamation operations when it is impractical to promptly redistribute the materials on regraded areas. Refer to Plates RA 5-1 and 7-1 for the location of the soil storage area. Because the soil salvage quantities are estimated, the actual contours and corresponding cross-sections are approximate. The final soil stockpiles will be reflected in the as-built drawings for the site. RA Plate 2-2 reflects as-built drawings of the stockpiles soils.

It is anticipated that the piles will be constructed in horizontal lifts of 1.5 to 2.0 feet. Tracked equipment will be used to reduce compaction. The stockpiles will be graded to a maximum slope of 2:1 and seeded to promote surface stabilization. The interim reclamation seed mix described in Chapter 3, Section 341.200 will be used for this purpose.

The stockpiles will be kept isolated from the main area of the refuse site to protect the material from contaminants and unnecessary compaction that would interfere with vegetation. A sign will be

installed on the stockpiles to identify one as a topsoil storage area and the second as the subsoil storage area. The stockpiles will be protected from wind and water erosion by being revegetated with a quick growing vegetative cover (interim seed mix) and by installing berms around the stockpiles to help trap sediment coming off the stockpiles. The boulders designated in area "K" (RA Plate 2-1) will be stockpiled separately from the soils salvaged from the refuse site. The boulders will either be placed along the perimeter of the substitute topsoil pile, access road, on top of the subsoil pile or will be transported to the rock stockpile at the Dugout/Soldier Canyon Mine topsoil stockpile adjacent to the Soldier Canyon Road.

#### **234.200      Stockpiled Topsoil**

**Stable Stockpile Site.** Stockpiled materials will be placed on a stable site as described in Section 234.100.

**Protection from Contaminants and Compaction.** Stockpiled soil will be protected from contaminants and unnecessary compaction. To protect the soil from contaminants and unnecessary compaction that could interfere with vegetation, the stockpiles will be isolated from the main refuse pile area (Section 234.100). A sign designating "topsoil" will be installed on the stockpile.

The stockpile will be constructed in such a manner as to allow equipment access around the base of the stockpiles for repair of the surfaces and diversion structures as needed.

Furthermore, berms will be constructed around the stockpiles to further separate the soils from the materials stored on the site. The berm will be constructed as specified in Chapter 7.

**Wind and Water Erosion Protection.** The stockpiles will be protected from wind and water erosion by prompt establishment and maintenance of a vegetative cover. Berms will be constructed around the stockpiles to help trap sediment runoff from the stockpiles. Refer to Section 242.100 for additional protection information.

**Topsoil Redistribution.** A limited quantity of stockpiled soil may be distributed on the refuse pile to determine the quantity of soil cover necessary to meet revegetation reclamation requirements. The remainder of the stockpiled soil will not be moved until redistributed during reclamation operations unless approved by the Division.

#### **234.300      Topsoil Stockpile Relocation**

Stockpiled soil in jeopardy of being detrimentally affected in terms of its quantity and quality by refuse pile operations may be temporarily redistributed upon approval by the Division and modification of this M&RP.

**Host Site.** Soil relocation may occur provided that such action does not permanently adversely affect soil of the host site.

**Topsoil Suitability.** Stockpiled soil relocation may occur provided the material is retained in a condition more suitable for redistribution than if stockpiled.

### **240      RECLAMATION PLAN**

#### **241      General Requirements**

Reclamation of the site (soil redistribution, amendments, and stabilization) is discussed in Sections 242, 243, and 244, respectively.

#### **242      Soil Redistribution**

##### **242.100      Soil Redistribution Practices**

The stored soil will be redistributed after recontouring of the site has occurred during reclamation activities. The refuse pile will be covered with 1 foot of equally blended coal waste and subsoil, approximately 2.6 feet of subsoil and approximately 0.4 feet of topsoil, to obtain a total depth of cover on the pile of 4 feet. The volume of material needed to cover the refuse pile is 82,976 CY.

There are currently topsoil and subsoil stockpiles located in the northeast portion of the site. Aero-Graphics, Inc. surveys estimated the volume in each stockpile as:

Topsoil Stockpiles volume = 8,384 CY

Subsoil Stockpile volume = 9,211CY

Total cover material currently available in the stockpiles is estimated to be 17,595 CY.

During reclamation the berms and embankments that create the perimeter ditches and sediment pond will be pulled back to blend the undisturbed areas into the reclaimed refuse pile. This process will generate approximately 2,947 CY of additional cover material. The total available cover material at the refuse site is 20,542 CY

To reduce the volume of imported cover material the bottom foot of cover material will be a blend of coal waste and subsoil. Equal portions of coal waste and subsoil will be used to create this blended cover material. Thus, the volume of available cover material may be increased by 10,372 CY to a total of 30,914 CY.

Volume of cover material to be imported =  $82,976 - 30,914 = 52,062$  CY

#### Summary of Volumes

Volume of material needed to obtain 4 feet of cover = 82,976 CY

Total cover material available at the site = 20,542 CY

Vol. of coal waste blended with sub-soil to produce the first foot of cover = 10,372 CY

Vol. of subsoil blended with coal waste to produce the first foot of cover = 10,372 CY

Volume of subsoil and topsoil needed to cover the pile = 72,604 CY

Volume of cover material to be imported from borrow site = 52,062 CY

Soils will be handled when they are in a loose or friable condition.

**Contemporaneous Reclamation:** In the future, the applicant may decide to demonstrate that two feet of cover material over the refuse pile is sufficient to meet reclamation standards for bond release. Additional information and clarification of the project will be provided at that time. An area on the refuse pile will receive reclamation treatments contemporaneously to justify the decrease of required cover soils from four feet to two feet for final reclamation.

**Soil Thickness:** The topsoil will be distributed to the disturbed areas illustrated on Figure RA 5-1.

Currently, it is planned that the refuse pile portion of the site be covered with approximately 48 inches of soil. Based on the proposed pile configuration this will require about 82,976 CY of soil. The remainder of the site area, not used for refuse storage will be covered with approximately 6 inches of substitute topsoil. Calculations of the soil cover volumes are presented in Attachment 2-2. Soils in the area designated as H and J (approximately 11.2 acres) are not currently planned for salvage, except in the area of the pond spillway (RA Plate 2-1).

**Compaction.** To prevent compaction of topsoil, soil-moving equipment will refrain from unnecessary operation over spread soil. Front-end-loaders and other wheel-mounted equipment may be used to transport and dump soil. However, to minimize compaction, only track-mounted equipment (e.g. bulldozers, trackhoes) will be used to spread the soil. The soil will be loosened prior to seeding as described in Section 341.200.



**Erosion.** Care will be exercised to ensure the stability of soil on graded slopes to guard against erosion during and after soil application. Erosion control measures will include but not be limited to extreme surface roughening (also known as pocking and gouging).

#### **242.200      Regrading**

Since the site has been disturbed by previous activities and will be used to permanently store coal mine waste, the area will not be returned to the original geometric configuration. Prior to soil redistribution, the disturbed area will be graded to meet the proposed final reclamation topography (RA Plate 5-3 ).

The surface of the refuse pile will be left in a roughened state and in addition will be ripped prior to the application of soil. After the 1<sup>st</sup> lift of subsoil is placed, the surface of the refuse pile will be ripped again to a depth of approximately 12 inches in an effort to promote root penetration and to mix the top layer of the refuse with the subsoil. Refer to Section 341.200 for further discussion of roughening methods.

The second type of surface consists of roads, perimeter ditches, etc. which may be compacted through their use. The surface will be ripped to a depth of approximately 1.5 to 2 feet with a ripper-equipped tractor or other appropriate equipment where possible to reduce surface compaction, to assure soil adherence, and promote root penetration. Following the ripping of the soils and the application of stockpiled soils, extreme roughening techniques will be applied. A backhoe or trackhoe will be used to create microbasins with a minimum depth of 18" and the width of the bucket. Soil removed to form the microbasins will be dropped approximately 2 to 3 feet above the microbasin onto the soil surface.

#### **242.300      Topsoil Redistribution on Impoundments and Roads**

The sedimentation pond and embankment will be breached and reclaimed with the other surface disturbed areas. Similarly, reclamation of abandoned roads will also follow the same technique as for other disturbed areas.

## **243 Soil Nutrients and Amendments**

Soil nutrients and amendments may be applied to the redistributed soil as necessary, to establish the vegetative cover. The type and rate of application will be determined just prior to contemporaneous and final reclamation activities based on analyses of samples collected from the stockpiled soil materials. The soils will, at a minimum, be tested for pH, EC, total carbon, SAR, phosphorus, nitrate-nitrogen, and water holding capacity.

In the event that the topsoil/subsoil piles are moved adjacent to the Dugout Canyon Road in conjunction with the pile expansion, organic matter will be incorporated into topsoil/subsoil piles when the soils are relocated. Vegetation growing on the piles was incorporated into the topsoil/subsoil piles as they were relocated. The future type and rate of application for organic matter will be determined by the applicant and UDOGM reclamation specialists prior to moving the soils during reclamation activities.

CHAPTER 1  
LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

Methane Degassification Amendment

**TABLE 1-2**  
**Disturbed Acres by Well Site**

<b>Well Site</b>	<b>Permitted Disturbed Acres</b>	<b>Surveyed Disturbed Acres*</b>
<b>G-1</b>	0.6	Not Constructed
<b>G-2</b>	1.21	0.45
<b>G-3</b>	0.97	0.51
<b>G-4</b>	0.85	0.39
<b>G-5</b>	0.75	0.42
<b>G-6</b>	0.32	0.59
<b>G-7</b>	1.25	0.49
<b>G-8</b>	0.9	Not Constructed
<b>G-9</b>	2.2	0.31
<b>G-10</b>	1.7	0.29
<b>G-11</b>	1.6	0.32
<b>G-12</b>	2	0.32
<b>G-13</b>	2.75	0.44
<b>G-14</b>	2	0.40
<b>G-15</b>	2.5	0.77
<b>G-16</b>	2	0.64
<b>G-17</b>	1.25	Not surveyed
<b>G-18</b>	1.4	0.70
<b>G-19</b>	2.3	0.52
<b>G-22 and Access Road</b>	3.5	1.79
<b>G-25</b>	1.8	0.60
<b>G-26</b>	1.8	0.60
<b>G-29</b>	2	Not Constructed
<b>G-30</b>	2	0.93

G-31	1.75	0.71
------	------	------

\* Professional Land Surveyor certified copy of acreage is located in Appendix 5-6 of M&RP.

## **CHAPTER 2**

### **SOILS**

**TABLE 2-1**  
**Topsoil Volumes\***

<b>Well No.</b>	<b>Cubic Yards of Material</b>
G-1	415
G-2	3,104
G-3	1,182
G-4	1,100
G-5	1,909
G-6	792
G-7	1251
G-8	543
G-9	1,574
G-10	2,344
G-11	254
G-12	563
G-13	2,162
G-14	1,544
G-15	1,475
G-16	1,092
G-17	797
G-18	2,195
G-19	2,037
G-22 & Access Road	2,103
G-25	1,081
G-26	927
G-29	1,363
G-30	1,235
G-31	4,624

**ATTACHMENT 2-1**  
**SOIL INVENTORY AND ASSESSMENT**

add to the back of existing information





Soil Analysis Report

Canyon Fuel Company

Dugout Canyon Mine

P.O. Box 1029

Wellington, UT 84542

Report ID: S1006234001

Project: Dugout Canyon Mine

Date Received: 6/14/2010

Date Reported: 7/22/2010

Work Order: S1006234

Lab ID	Sample ID	Depths Inches	pH s.u.	Saturation %	Electrical		Field Capacity %	Will Point %
					Conductivity dS/m	Capacity %		
S1006234-001	G-30-02	0-3	6.7	45.9	0.52	33.8	15.2	
S1006234-002	G-30-02	3-8	6.8	51.1	0.31	29.4	16.8	
S1006234-003	G-30-02	8-30	8.2	40.7	0.23	24.7	12.7	
S1006234-004	G-30-02	30-60	8.2	41.3	0.38	26.1	14.4	
S1006234-005	G-30-01	0-3	7.7	51.0	0.47	36.2	17.9	
S1006234-006	G-30-01	3-8	7.3	48.5	0.46	32.1	16.7	
S1006234-007	G-30-01	8-12	7.9	45.0	0.28	26.5	16.0	
S1006234-008	DUG-5-2, G-29	0-2	7.6	52.6	0.56	29.7	20.1	
S1006234-009	DUG-5-2 / G-29	2-9	7.7	53.1	0.54	31.5	19.7	
S1006234-010	DUG-5-2 / G-29	9-16	8.0	39.9	0.45	25.5	14.0	
S1006234-011	DUG-5-2 / G-29	16-30	8.1	41.0	0.43	25.0	16.5	
S1006234-012	DUG-5-2 / G-29	30-45	8.1	40.8	0.26	25.9	15.0	

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2SO4= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyRS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral Pot.= Neutralization Potential

Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor  
Karen Secor, Soil Lab Supervisor



Inter-Mountain Laboratories, Inc.  
1673 Terra Avenue, Sheridan, Wyoming 82801

(307) 672-8945

# Soil Analysis Report

Canyon Fuel Company

Dugout Canyon Mine

P.O. Box 1029

Wellington, UT 84542

Report ID: S1006234001

Date Reported: 7/22/2010

Work Order: S1006234

Project: Dugout Canyon Mine

Date Received: 6/14/2010

Lab ID	Sample ID	Depths Inches	PE		PE		PE		SAR	Sand %	Silt %	Clay %	Texture
			Calcium meq/L	Magnesium meq/L	Potassium meq/L	Sodium meq/L							
S1006234-001	G-30-02	0-3	2.49	1.19	0.22	0.64	0.47	34.0	30.0	36.0	Clay Loam		
S1006234-002	G-30-02	3-8	1.95	0.53	0.03	0.12	0.11	23.0	32.0	45.0	Clay		
S1006234-003	G-30-02	8-30	1.50	0.30	0.02	0.13	0.14	30.0	35.0	35.0	Clay Loam		
S1006234-004	G-30-02	30-60	1.56	0.56	0.01	0.76	0.74	25.0	40.0	35.0	Clay Loam		
S1006234-005	G-30-01	0-3	3.24	0.70	0.14	0.14	0.10	36.0	31.0	33.0	Clay Loam		
S1006234-006	G-30-01	3-8	3.25	0.74	0.10	0.11	0.08	35.0	33.0	32.0	Clay Loam		
S1006234-007	G-30-01	8-12	1.80	0.41	0.03	0.27	0.25	11.0	51.0	38.0	Silty Clay Loam		
S1006234-008	DUG-5-2 / G-29	0-2	4.27	0.54	0.31	0.26	0.16	31.0	42.0	27.0	Clay Loam		
S1006234-009	DUG-5-2 / G-29	2-9	4.28	0.64	0.28	0.24	0.15	23.0	48.0	29.0	Clay Loam		
S1006234-010	DUG-5-2 / G-29	9-16	2.49	0.50	0.18	0.66	0.54	31.0	38.0	31.0	Clay Loam		
S1006234-011	DUG-5-2 / G-29	16-30	1.89	0.58	0.14	0.79	0.71	33.0	35.0	32.0	Clay Loam		
S1006234-012	DUG-5-2 / G-29	30-45	1.47	0.35	0.06	0.15	0.16	26.0	44.0	30.0	Clay Loam		

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2Osol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate  
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral, Pot.= Neutralization Potential  
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor

Karen Secor, Soil Lab Supervisor



Inter-Mountain Laboratories, Inc.  
1673 Terra Avenue, Sheridan, Wyoming 82801

(307) 672-8945

### Soil Analysis Report

Canyon Fuel Company

Dugout Canyon Mine

P.O. Box 1029

Wellington, UT 84542

Report ID: S1006234001

Project: Dugout Canyon Mine

Date Received: 6/14/2010

Date Reported: 7/22/2010  
Work Order: S1006234

Lab ID	Sample ID	Depths Inches	CO <sub>3</sub>		Nitrogen		Available		Available		Selenium	Boron	Total		
			%		ppm		ppm	Phosphorus	Potassium		ppm	ppm	TKN	Carbon	TOC
S1006234-001	G-30-02	0-3	1.2		10.5		16.2		336		<0.02	0.57	0.21	2.1	1.9
S1006234-002	G-30-02	3-8	1.5		0.4		0.86		96.2		<0.02	0.33	0.13	0.6	0.4
S1006234-003	G-30-02	8-30	24.4		0.5		0.64		53.2		<0.02	0.22	0.05	3.0	0.2
S1006234-004	G-30-02	30-60	20.2		0.6		0.67		57.0		<0.02	0.19	0.06	2.7	0.3
S1006234-005	G-30-01	0-3	6.5		2.9		17.1		259		<0.02	0.35	0.27	3.1	2.3
S1006234-006	G-30-01	3-8	2.1		1.3		3.62		181		0.02	0.21	0.14	1.7	1.5
S1006234-007	G-30-01	8-12	13.8		1.1		0.78		67.0		<0.02	0.15	0.07	1.9	0.2
S1006234-008	DUG-5-2 / G-2 <sup>9</sup>	0-2	22.1		4.0		20.5		263		<0.02	0.34	0.29	5.9	3.4
S1006234-009	DUG-5-2 / G-2 <sup>9</sup>	2-9	18.4		4.4		3.86		280		<0.02	0.32	0.27	5.0	2.9
S1006234-010	DUG-5-2 / G-2 <sup>9</sup>	9-16	26.4		3.9		1.63		212		<0.02	0.15	0.12	3.8	1.2
S1006234-011	DUG-5-2 / G-2 <sup>9</sup>	16-30	26.6		1.8		1.03		192		0.02	0.13	0.11	3.8	0.9
S1006234-012	DUG-5-2 / G-2 <sup>9</sup>	30-45	30.3		0.9		0.64		95.2		<0.02	0.12	0.08	4.2	0.5

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H<sub>2</sub>Osol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential

Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by:

*Karen A Secor*  
Karen Secor, Soil Lab Supervisor



Soil Analysis Report

Canyon Fuel Company  
Dugout Canyon Mine  
P.O. Box 1029  
Wellington, UT 84542

Report ID: S1006234001

Project: Dugout Canyon Mine  
Date Received: 6/14/2010

Date Reported: 7/22/2010  
Work Order: S1006234

Lab ID	Sample ID	Depths Inches	Available		Exchangeable	
			Sodium meq/100g	Sodium meq/100g	Sodium meq/100g	Sodium meq/100g
S1006234-001	G-30-02	0-3	0.02	<0.01		
S1006234-002	G-30-02	3-8	0.03	0.03		
S1006234-003	G-30-02	8-30	0.02	0.02		
S1006234-004	G-30-02	30-60	0.03	<0.01		
S1006234-005	G-30-01	0-3	0.01	<0.01		
S1006234-006	G-30-01	3-8	0.02	0.01		
S1006234-007	G-30-01	8-12	0.03	0.02		
S1006234-008	DUG-5-2 / G-2 <sup>9</sup>	0-2	0.02	<0.01		
S1006234-009	DUG-5-2 / G-2 <sup>9</sup>	2-9	0.02	<0.01		
S1006234-010	DUG-5-2 / G-2 <sup>9</sup>	9-16	0.02	<0.01		
S1006234-011	DUG-5-2 / G-2 <sup>9</sup>	16-30	0.01	<0.01		
S1006234-012	DUG-5-2 / G-2 <sup>9</sup>	30-45	0.02	0.01		

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2Osol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate  
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral, Pot.= Neutralization Potential  
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A Secor

Karen Secor, Soil Lab Supervisor



Soil Analysis Report

Canyon Fuel Company

Dugout Canyon Mine

P.O. Box 1029

Wellington, UT 84542

Report ID: S1006234001

Project: Dugout Canyon Mine

Date Received: 6/14/2010

Date Reported: 7/22/2010

Work Order: S1006234

Lab ID	Sample ID	Depths Inches	Total Sulfur		T.S. AB		Neutral Potential		T.S. ABP		Sulfate Sulfur		Pyritic Sulfur		Organic Sulfur		Pyritics AB		Pyritics ABP	
			%	t/1000t	t/1000t	t/1000t	%	%	%	%	%	t/1000t	t/1000t							
S1006234-001	G-30-02	0-3	0.03	1.03	10.6	9.61	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	10.6		
S1006234-002	G-30-02	3-8	0.02	0.64	14.2	13.6	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	14.2		
S1006234-003	G-30-02	8-30	0.01	0.42	236	235	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	236		
S1006234-004	G-30-02	30-60	0.02	0.47	200	200	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	200		
S1006234-005	G-30-01	0-3	0.04	1.23	69.6	68.3	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.43	69.2			
S1006234-006	G-30-01	3-8	0.04	1.18	20.4	19.3	0.02	<0.01	0.01	<0.01	0.01	0.01	0.01	0.01	0.01	<0.01	<0.01	20.4		
S1006234-007	G-30-01	8-12	0.02	0.60	143	142	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	143		
S1006234-008	DUG-5-2 / G-29	0-2	0.04	1.24	214	213	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.48	213			
S1006234-009	DUG-5-2 / G-29	2-9	0.03	1.08	178	177	<0.01	0.01	<0.01	<0.01	0.02	0.43	178							
S1006234-010	DUG-5-2 / G-29	9-16	0.03	0.82	222	221	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	222							
S1006234-011	DUG-5-2 / G-29	16-30	0.03	0.84	239	238	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	239							
S1006234-012	DUG-5-2 / G-29	30-45	0.02	0.57	300	299	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	300							

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2O Sol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, Pyrs= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral, Pot.= Neutralization Potential

Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor

Karen Secor, Soil Lab Supervisor



Inter-Mountain Laboratories, Inc.  
1673 Terra Avenue, Sheridan, Wyoming 82801

(307) 672-8945

### Soil Analysis Report

#### Canyon Fuel Company

Dugout Canyon Mine  
P.O. Box 1029  
Wellington, UT 84542

Report ID: S0705521001

Project: Dugout Canyon Mine

Date Received: 5/29/2007

Date: 7/9/2007

Work Order: S0705521

Lab ID	Sample ID	Depths Inches	pH s.u.	Saturation %	Electrical		Field Capacity %	Wilt	
					Conductivity dS/m			Point %	
S0705521-001	G-31 SP1	0-6	7.7	41.7	0.29		16	15	
S0705521-002	G-31 SP1	6-24	7.8	39.6	0.26		16	15	
S0705521-003	G-31 SP1	24-33	7.9	40.2	0.24		18	15	
S0705521-004	97 SP1	0-6	7.0	46.6	0.35		18	15	
S0705521-005	97 SP1	6-27	7.8	43.1	0.32		18	16	
S0705521-006	62 SP1	0-7	7.6	48.7	0.33		18	18	
S0705521-007	62 SP1	7-22	7.9	34.4	0.24		15	13	
S0705521-008	62 SP1	22-36	7.8	40.3	0.23		16	17	
S0705521-009	G-18 SP1	0-7	7.6	46.3	0.37		18	16	
S0705521-010	G-18 SP1	7-21	7.8	46.9	0.34		16	17	
S0705521-011	13 SP1	0-10	7.8	42.5	0.34		14	15	
S0705521-012	13 SP1	10-26	7.9	40.7	0.30		15	15	

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2Osol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral, Pot.= Neutralization Potential

Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor

Karen Secor, Soil Lab Supervisor



Inter-Mountain Laboratories, Inc.  
1673 Terra Avenue, Sheridan, Wyoming 82801

(307) 672-8945

### Soil Analysis Report

#### Canyon Fuel Company

Dugout Canyon Mine  
P.O. Box 1029  
Wellington, UT 84542

Report ID: S0705521001

Project: Dugout Canyon Mine

Date Received: 5/29/2007

Date: 7/9/2007

Work Order: S0705521

Lab ID	Sample ID	Depths Inches	Calcium	Magnesium	Sodium	Potassium	SAR	Available	Exchangeable
			meq/L	meq/L	meq/L	meq/L		Sodium meq/100g	Sodium meq/100g
S0705521-001	G-31 SP1	0-6	3.33	0.30	0.18	0.07	0.13	0.38	0.37
S0705521-002	G-31 SP1	6-24	4.06	0.33	0.27	0.06	0.18	0.28	0.27
S0705521-003	G-31 SP1	24-33	2.42	0.37	0.19	0.06	0.16	0.30	0.30
S0705521-004	97 SP1	0-6	2.44	0.69	0.25	0.09	0.20	0.05	0.04
S0705521-005	97 SP1	6-27	2.30	0.53	0.23	0.05	0.19	0.32	0.31
S0705521-006	62 SP1	0-7	2.27	0.58	0.20	0.20	0.17	0.31	0.31
S0705521-007	62 SP1	7-22	1.48	0.55	0.21	0.17	0.21	0.17	0.16
S0705521-008	62 SP1	22-36	1.53	0.59	0.14	0.15	0.14	0.34	0.33
S0705521-009	G-18 SP1	0-7	2.41	0.55	0.13	0.17	0.11	0.18	0.17
S0705521-010	G-18 SP1	7-21	2.70	0.58	0.22	0.08	0.17	0.36	0.35
S0705521-011	13 SP1	0-10	3.38	0.36	0.08	0.08	0.06	0.27	0.27
S0705521-012	13 SP1	10-26	2.97	0.37	0.12	0.04	0.10	0.23	0.23

These results apply only to the samples tested.

Abbreviations for extractants: PE = Saturated Paste Extract, H2O Sol = water soluble, AB-DTPA = Ammonium Bicarbonate-DTPA, AAO = Acid Ammonium Oxalate

Abbreviations used in acid base accounting: T.S. = Total Sulfur, AB = Acid Base, ABP = Acid Base Potential, PyrS = Pyritic Sulfur, Pyr+Org = Pyritic Sulfur + Organic Sulfur, Neutral Pot = Neutralization Potential

Miscellaneous Abbreviations: SAR = Sodium Adsorption Ratio, CEC = Cation Exchange Capacity, ESP = Exchangeable Sodium Percentage

Reviewed by:

*Karen A Secor*

Karen Secor, Soil Lab Supervisor



Soil Analysis Report

Canyon Fuel Company

Dugout Canyon Mine

P.O. Box 1029

Wellington, UT 84542

Report ID: S0705521001

Date: 7/9/2007

Work Order: S0705521

Project: Dugout Canyon Mine

Date Received: 5/29/2007

Lab ID	Sample ID	Depths Inches	Coarse				Texture	Fragment
			Sand %	Silt %	Clay %			
S0705521-001	G-31 SP1	0-6	29.0	36.0	35.0		Clay Loam	0.88
S0705521-002	G-31 SP1	6-24	29.0	37.0	34.0		Clay Loam	1.32
S0705521-003	G-31 SP1	24-33	31.0	40.0	29.0		Clay Loam	0.78
S0705521-004	97 SP1	0-6	43.0	27.0	30.0		Clay Loam	0.02
S0705521-005	97 SP1	6-27	38.0	34.0	28.0		Clay Loam	0.91
S0705521-006	62 SP1	0-7	29.0	43.0	28.0		Clay Loam	6.54
S0705521-007	62 SP1	7-22	46.0	34.0	20.0		Loam	0.02
S0705521-008	62 SP1	22-36	24.0	48.0	28.0		Clay Loam	0.11
S0705521-009	G-18 SP1	0-7	35.0	41.0	24.0		Loam	2.45
S0705521-010	G-18 SP1	7-21	24.0	56.0	20.0		Silt Loam	0.65
S0705521-011	13 SP1	0-10	30.0	40.0	30.0		Clay Loam	4.56
S0705521-012	13 SP1	10-26	24.0	48.0	28.0		Clay Loam	0.58

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2Osol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral, Pot= Neutralization Potential

Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor

Karen Secor, Soil Lab Supervisor





Inter-Mountain Laboratories, Inc.  
1673 Terra Avenue, Sheridan, Wyoming 82801

(307) 672-8945

### Soil Analysis Report

Canyon Fuel Company

Dugout Canyon Mine

P.O. Box 1029

Wellington, UT 84542

Report ID: S0705521001

Date: 7/9/2007

Work Order: S0705521

Project: Dugout Canyon Mine  
Date Received: 5/29/2007

Lab ID	Sample ID	Depths Inches	Nitrogen				
			Boron	TKN	Nitrate	Phosphorus	Selenium
			ppm	%	ppm	ppm	ppm
S0705521-001	G-31 SP1	0-6	0.29	0.12	3.06	1.46	<0.02
S0705521-002	G-31 SP1	6-24	0.25	0.09	1.03	1.36	<0.02
S0705521-003	G-31 SP1	24-33	0.24	0.08	0.47	0.44	<0.02
S0705521-004	97 SP1	0-6	0.34	0.15	4.54	0.70	<0.02
S0705521-005	97 SP1	6-27	0.46	0.11	1.60	0.18	<0.02
S0705521-006	62 SP1	0-7	0.28	0.10	4.98	12.7	<0.02
S0705521-007	62 SP1	7-22	0.15	0.04	0.59	1.83	<0.02
S0705521-008	62 SP1	22-36	0.20	0.05	0.86	0.76	<0.02
S0705521-009	G-18 SP1	0-7	0.43	0.17	6.51	1.23	<0.02
S0705521-010	G-18 SP1	7-21	0.27	0.10	1.06	0.26	<0.02
S0705521-011	13 SP1	0-10	0.31	0.12	2.85	0.55	<0.02
S0705521-012	13 SP1	10-26	0.28	0.09	1.46	<0.01	<0.02

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2OSol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate  
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, Pyrs= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential  
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor

Karen Secor, Soil Lab Supervisor



Soil Analysis Report

Canyon Fuel Company

Dugout Canyon Mine  
P.O. Box 1029  
Wellington, UT 84542

Report ID: S0705521001

Project: Dugout Canyon Mine

Date Received: 5/29/2007

Date: 7/9/2007  
Work Order: S0705521

Lab ID	Sample ID	Depths Inches	Total		T.S.		Neut.		T.S.		Total		TOC	
			Sulfur	%	AB	t/1000t	Pot.	t/1000t	ABP	t/1000t	Carbon	%	%	%
S0705521-001	G-31 SP1	0-6	0.01	0.01	0.45	213	212	3.3	0.7					
S0705521-002	G-31 SP1	6-24	0.01	0.01	0.35	257	256	3.6	0.5					
S0705521-003	G-31 SP1	24-33	0.04	1.23	309	308	4.3	0.6						
S0705521-004	97 SP1	0-6	<0.01	<0.01	14.4	14.4	1.1	1.0						
S0705521-005	97 SP1	6-27	0.01	0.39	142	141	2.3	0.6						
S0705521-006	62 SP1	0-7	0.02	0.77	91.4	90.6	2.1	1.0						
S0705521-007	62 SP1	7-22	0.01	0.33	136	136	1.5	<0.1						
S0705521-008	62 SP1	22-36	<0.01	<0.01	126	126	1.8	0.2						
S0705521-009	G-18 SP1	0-7	0.01	0.41	70.7	70.3	1.7	0.9						
S0705521-010	G-18 SP1	7-21	<0.01	<0.01	188	188	2.7	0.4						
S0705521-011	13 SP1	0-10	0.03	0.84	213	212	3.2	0.7						
S0705521-012	13 SP1	10-26	0.04	1.11	258	257	3.5	0.4						

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2O Sol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate  
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral, Pot.= Neutralization Potential  
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor

Karen Secor, Soil Lab Supervisor



Inter-Mountain Laboratories, Inc.  
1673 Terra Avenue, Sheridan, Wyoming 82801

(307) 672-8945

### Soil Analysis Report

#### Canyon Fuel Company

Dugout Canyon Mine  
P.O. Box 1029  
Wellington, UT 84542

Report ID: S0909250001

Project: Dugout Canyon Mine

Date Received: 9/14/2009

Date Reported: 10/8/2009  
Work Order: S0909250

Lab ID	Sample ID	pH	Saturation	Electrical	Field	Wilt	PE	PE	PE	PE	SAR
		s.u.	%	Conductivity	Capacity	Point	Calcium	Magnesium	Potassium	Sodium	
				dS/m	%	%	meq/L	meq/L	meq/L	meq/L	
S0909250-001	G-25	7.7	46.3	0.48	45	14	2.66	0.87	0.07	0.76	0.57
S0909250-002	G-26	7.4	43.9	0.45	28	12	3.66	0.73	0.10	0.16	0.11

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2Osol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential

Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor

Karen Secor, Soil Lab Supervisor



Inter-Mountain Laboratories, Inc.  
1673 Terra Avenue, Sheridan, Wyoming 82801

(307) 672-8945

### Soil Analysis Report

Canyon Fuel Company

Dugout Canyon Mine

P.O. Box 1029

Wellington, UT 84542

Report ID: S0909250001

Project: Dugout Canyon Mine

Date Received: 9/14/2009

Date Reported: 10/8/2009

Work Order: S0909250

Lab ID	Sample ID	Sand			Clay	Texture	CO3	Nitrogen			Selenium	Boron	Phosphorus	TKN
		%	%	%				%	ppm	ppm	ppm	ppm	ppm	%
S0909250-001	G-25	26.0	45.0	29.0		Clay Loam	21.4		5.2	<0.02		0.49	6.47	<0.01
S0909250-002	G-26	38.0	41.0	21.0		Loam	11.2		2.1	<0.02		0.35	11.6	<0.01

These results apply only to the samples tested

Abbreviations for extractants: PE = Saturated Paste Extract, H2O Sol = water soluble, AB-DTPA = Ammonium Bicarbonate-DTPA, AAO = Acid Ammonium Oxalate

Abbreviations used in acid base accounting: T.S. = Total Sulfur, AB = Acid Base, ABP = Acid Base Potential, Py/S = Pyritic Sulfur, Py+Org = Pyritic Sulfur + Organic Sulfur, Neutral Pot. = Neutralization Potential

Miscellaneous Abbreviations: SAR = Sodium Adsorption Ratio, CEC = Cation Exchange Capacity, ESP = Exchangeable Sodium Percentage

Reviewed by:

*Karen A. Secor*

Karen Secor, Soil Lab Supervisor



Inter-Mountain Laboratories, Inc.  
1673 Terra Avenue, Sheridan, Wyoming 82801

(307) 672-8945

**Soil Analysis Report**

**Canyon Fuel Company**

Project: Dugout Canyon Mine  
Date Received: 9/14/2009

Dugout Canyon Mine  
P.O. Box 1029  
Wellington, UT 84542

Report ID: S0909250001

Date Reported: 10/8/2009  
Work Order: S0909250

Lab ID	Sample ID	Available	Available	Exchangeable	Total	TOC	Neutral
		Potassium	Sodium	Sodium	Carbon	%	Potential
		ppm	meq/100g	meq/100g	%	%	1/1000t
S0909250-001	G-25	90.7	0.18	0.14	3.1	0.5	214
S0909250-002	G-26	96.0	0.02	0.01	2.5	1.2	112

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H2O Sol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate  
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyS= Pyritic Sulfur, Py+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential  
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A. Secor

Karen Secor, Soil Lab Supervisor

**ATTACHMENT 2-2**  
**TOPSOIL CALCULATIONS**

add to the back of existing information

Volume Report 10/15/2009 14:57  
 Comparing Grid: C:/Documents and Settings/svasten/Desktop/25a Base.grd  
 and Grid: C:/Documents and Settings/svasten/Desktop/25a Final.grd  
 Grid corner locations: 89230.17,89762.89 to 89623.00,90123.58  
 Grid resolution X: 100, Y: 100 Grid cell size X: 3.93, Y: 3.61  
 Area in Cut : 0.0 S.F., 0.00 Acres  
 Area in Fill: 1,793.5 S.F., 0.04 Acres  
 Total inclusion area: 1,793.5 S.F., 0.04 Acres  
 Cut to Fill ratio: 0.00  
 Average Fill Depth: 2.92  
 Max Fill Depth: 6.64  
 Cut (C.Y.) / Area (acres): 0.00  
 Fill (C.Y.) / Area (acres): 4708.62  
 Cut volume: 0.0 C.F., 0.00 C.Y.  
 Fill volume: 5,234.3 C.F., 193.86 C.Y.

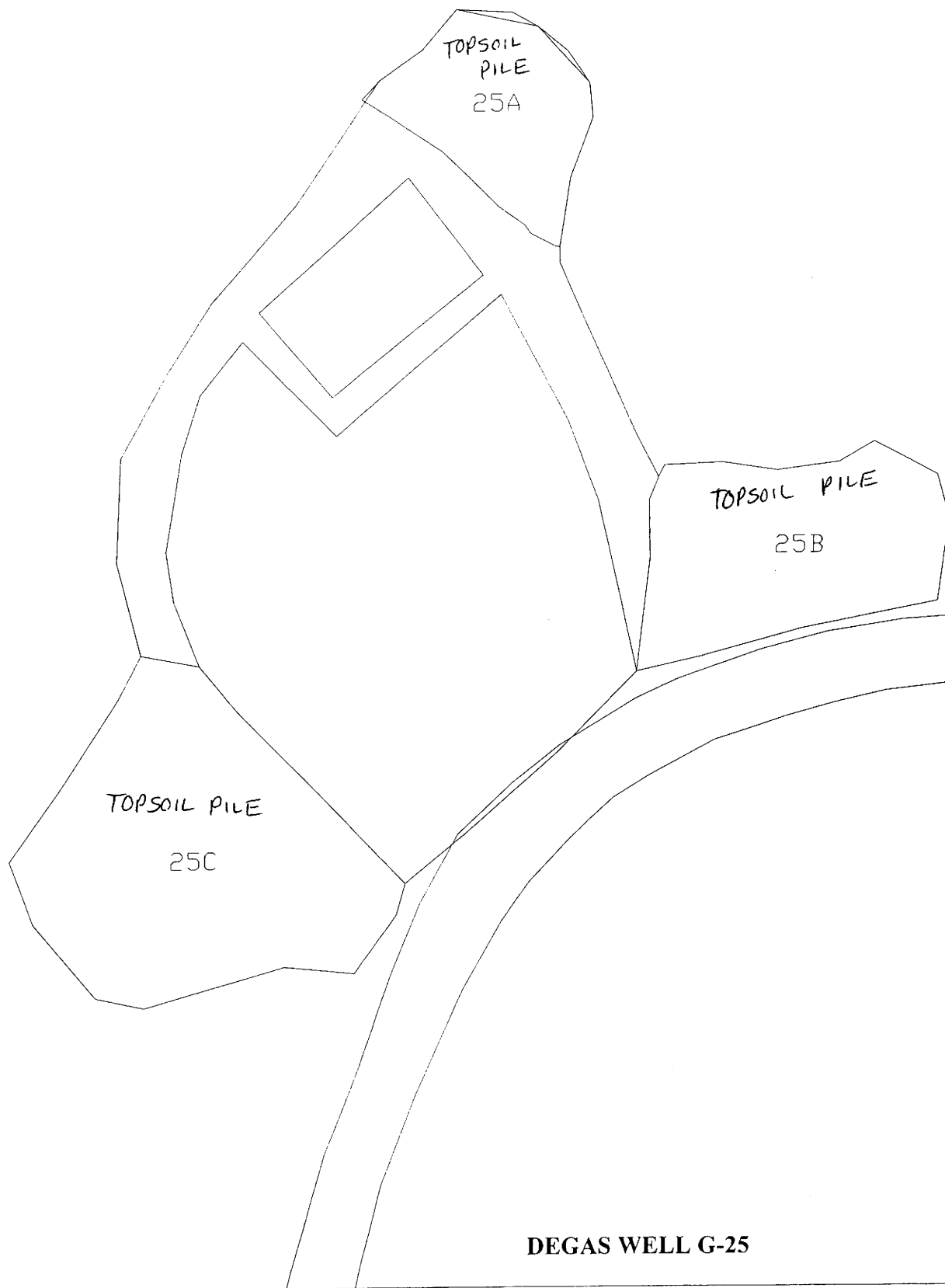
Volume Report 10/15/2009 14:58  
 Comparing Grid: C:/Documents and Settings/svasten/Desktop/25b Base.grd  
 and Grid: C:/Documents and Settings/svasten/Desktop/25b Final.grd  
 Grid corner locations: 89230.17,89762.89 to 89623.00,90123.58  
 Grid resolution X: 100, Y: 100 Grid cell size X: 3.93, Y: 3.61  
 Area in Cut : 0.6 S.F., 0.00 Acres  
 Area in Fill: 2,952.9 S.F., 0.07 Acres  
 Total inclusion area: 2,953.4 S.F., 0.07 Acres  
 Cut to Fill ratio: 0.00  
 Average Cut Depth: 0.02 Average Fill Depth: 2.05  
 Max Cut Depth: 0.05 Max Fill Depth: 6.16  
 Cut (C.Y.) / Area (acres): 0.01  
 Fill (C.Y.) / Area (acres): 3305.22  
 Cut volume: 0.0 C.F., 0.00 C.Y.  
 Fill volume: 6,050.7 C.F., 224.10 C.Y.

Volume Report 10/15/2009 14:30  
 Comparing Grid: C:/Documents and Settings/svasten/Desktop/25c Base.grd  
 and Grid: C:/Documents and Settings/svasten/Desktop/25c Final.grd  
 Grid corner locations: 89230.17,89762.89 to 89623.00,90123.58  
 Grid resolution X: 100, Y: 100 Grid cell size X: 3.93, Y: 3.61  
 Area in Cut : 1.6 S.F., 0.00 Acres  
 Area in Fill: 4,988.1 S.F., 0.11 Acres  
 Total inclusion area: 4,989.7 S.F., 0.11 Acres  
 Cut to Fill ratio: 0.00  
 Average Cut Depth: 0.05 Average Fill Depth: 3.59  
 Max Cut Depth: 0.10 Max Fill Depth: 9.01  
 Cut (C.Y.) / Area (acres): 0.03  
 Fill (C.Y.) / Area (acres): 5788.04  
 Cut volume: 0.1 C.F., 0.00 C.Y.  
 Fill volume: 17,901.3 C.F., 663.01 C.Y.

**DEGAS WELL G-25 - 1081 CY**

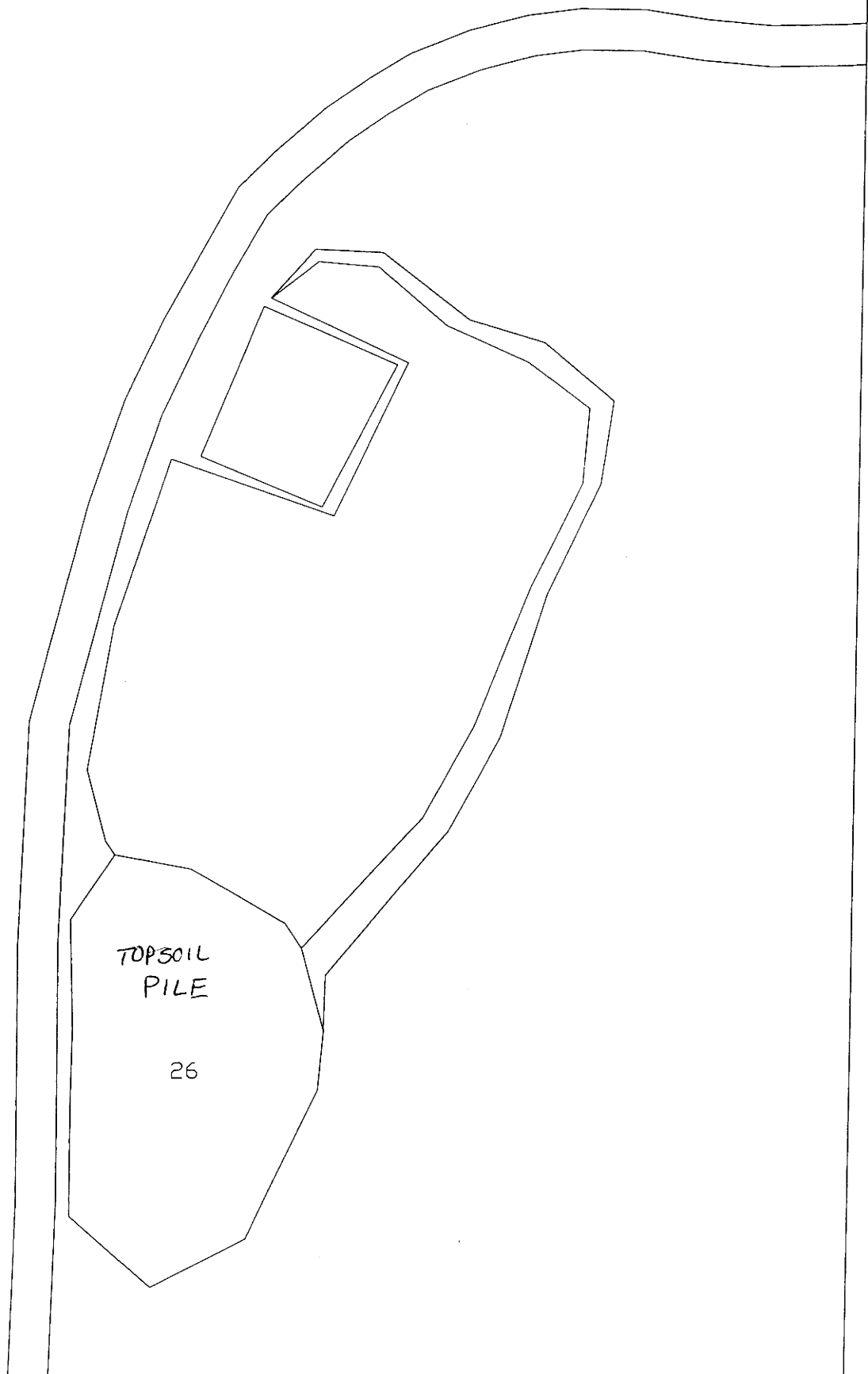
Volume Report 10/15/2009 12:36  
 Comparing Grid: C:/Documents and Settings/svasten/Desktop/26 Base.grd  
 and Grid: C:/Documents and Settings/svasten/Desktop/26 Final.grd  
 Grid corner locations: 86870.81,88979.51 to 87143.53,89199.08  
 Grid resolution X: 100, Y: 100 Grid cell size X: 2.73, Y: 2.20  
 Area in Cut : 85.7 S.F., 0.00 Acres  
 Area in Fill: 6,153.5 S.F., 0.14 Acres  
 Total inclusion area: 6,239.2 S.F., 0.14 Acres  
 Cut to Fill ratio: 0.00  
 Average Cut Depth: 0.01 Average Fill Depth: 4.07  
 Max Cut Depth: 0.08 Max Fill Depth: 11.65  
 Cut (C.Y.) / Area (acres): 0.24  
 Fill (C.Y.) / Area (acres): 6468.77  
 Cut volume: 0.9 C.F., 0.03 C.Y.  
 Fill volume: 25,016.6 C.F., 926.54 C.Y.

**DEGAS WELL G-26 - 927 CY**



DEGAS WELL G-25





DEGAS WELL G-26